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GOODYEAR REFINANCING UNDER CONSIDERATION

Litchfield's Letter to Stockholders Closely Followed by Message From Committee Formed To Protect Interests of Common Share Owners.

A plan for reorganizing the capital structure of the Goodyear Tire and Rubber Company, including an adjustment of $29.75 accumulated dividends on each share of preferred, is under consideration by the management, P. W. Litchfield, president, advised stockholders on August 18. Scarcely had this become known when it was also announced a group of influential common stockholders had united in the formation of a protective committee, to oppose any plan which would put the corporation to large expense. Preferred stockholders had previously formed a protective committee.

Mr. Litchfield's Letter

President Litchfield's letter follows:

"The executives of this company have for some time past been giving active consideration to various plans for adjustment of deferred dividends on the preferred stock ($29.75 per share), either separately or in conjunction with refunding the company's outstanding senior securities—first mortgage bonds, debentures and prior preference stock.

"Your company is not now in a position to pay off these deferred dividends in cash. One possible adjustment under consideration is to issue to holders of preferred stock a preferred stock with a value substantially equal to the amount of these dividends.

"The executives of your company are in accord with the holders of the management stock in their desire, now that your company's past difficulties have been so largely corrected, to work out a plan for refunding senior securities which, in addition to reducing interest and sinking fund charges, will do away with the management stock and all of the existing voting trusts and restore the management of your company to its stockholders. Representations as to management made at the time of the issue of the present senior securities would make this impossible without refunding except on their unanimous consent, which, obviously, it would have been impossible to obtain.

"This letter is sent to stockholders in advance of the final working out of a plan because of inquiries made of the company about the formation in Cleveland, Ohio, of a self-constituted committee calling itself the 'Protective Committee of the Preferred Stockholders.'

"Stockholders are urged to maintain their independence of action, and the management requests the stockholders not to give proxies to this committee or deposit stock with it or with any similar self-constituted committee. Such action by stockholders might prevent them from subsequently accepting any plan hereafter submitted and might seriously imperil the success of such plan of which they might heartily approve.

"Whatever plan may be devised will be submitted with full details and explanations to stockholders for their individual consideration. No plan will be adopted unless approved by large percentages of the company's stock."

The Committee's Letter

Coincident with the issuance of President Litchfield's letter another message was forwarded to all common stockholders of the company by a committee which avowedly has for its purpose "the examination of any plan of reorganization or refinancing that may be proposed and to take such action as the committee in its sole discretion or under advice of counsel may decide to be for the best interests of the common stockholders."

The committee is made up of F. F. Prentiss and R. H. Bishop, Jr., both of Cleveland; Dr. Charles F. Wishart of Wooster, Ohio; Paul V. Robinson of East Liverpool, Ohio; Frank C. Rowland of Akron, Ohio, and F. C. Tomlinson of Ironton, Ohio. The letter addressed to Goodyear common stockholders follows:

"We are advised that you own common stock of the Goodyear Tire and Rubber Company. Undoubtedly you have noticed that a preferred stockholders' protective committee has been formed and that the purpose of such committee, as indicated by its circular, is to secure prompt payment by the company of the unpaid back dividends on the preferred stock ($29.75 per share, aggregating $19,000,000) in preferred stock at par.

"We believe that the management of the company is likely to take the opportunity afforded by the demands of this Preferred Stockholders' Pro-

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Looking Toward 1927

In a recent statement which has been widely quoted in the financial press, H. T. Dunn, president of the Fisk Rubber Company, Chicopee Falls, Mass., predicts that in 1927 rubber manufacturers will see the return of real prosperity. "With the worst now behind them", said Mr. Dunn, "it looks as if the rubber companies were headed for the best year in their history in 1927. The industry is emerging from abnormal conditions of the past two years which were caused by over-speculation and sharp advances and declines in crude rubber. There is every prospect that greater stability will prevail in the future, which should be reflected in very satisfactory earnings for well-managed companies".

LARGER CAR OUTPUT SEEN BY INDUSTRY

Second Half of Year is Expected to Show Material Increase in Automobile Production over First Half—Prices Stable—Many Refinements Added.

Reports from the various automotive centers indicate that the second half of the year will be even bigger than the first half in both automobile sales and production. This belief is borne out by the preparations being made by both the small and larger producers for their fall campaigns.

After the record first half, in which approximately 2,175,000 cars and trucks were manufactured, recording a 12 per cent increase over the same period last year, there has been a general impression that the fall and winter months will fall short, but that their showing should be good enough to make 1926 better than 1925. This conclusion gained credence because the business of this year has not the stimulus of reduced prices on improved models which boosted sales along twelve months ago, with the result that October and not April, as has been the case for years past, proved the largest month of the twelve.

Refinements Being Added

The leading makers are introducing improved models for this season but such savings as they have been able to effect through increased volume of sales have been spent on refinements such as redesigned crankshafts, aluminum pistons, air cleaners, oil purifiers and other devices. A number of the leading manufacturers have announced the use of rubber in engine mountings, spring suspension and other parts of the car. This development is being watched with interest by the rubber industry for the adoption of rubber by all car makers will result in a welcome increase in sales within the next few years.

As for prices, there is little expectation of a price war, but competition is keen and manufacturers are expected to exert all their energies toward keeping selling prices as low as possible.

Prominent Speakers Will Have Record Audience at Symposium

Crude Rubber Meeting in Philadelphia Expected to Attract 500 or More -- Complete Program Includes Eighteen Papers —Weston To Be Toastmaster at Banquet September 9.

The Crude Rubber Symposium to be held under the auspices of the Rubber Division of the American Chemical Society at the University of Pennsylvania on September 9 and 10 is expected to bring together the greatest number of rubber technicians and executives ever recorded in the history of the rubber industry.

The last meeting of the Rubber Division in Philadelphia, which was held about seven years ago, brought out a record gathering, and the Akron meeting last February was a close second. Present indications are that between 500 and 700 of the world's leading rubber chemists, engineers and executives will attend the coming meeting in Philadelphia.

The principal reason for the attendance of such a large number of members and guests lies in the high standing of those who will address the sessions and the timeliness of their subjects. Among the speakers who will address the Symposium meetings on various aspects of the scientific and economical development of crude, synthetic and guayule rubber will be the following experts: Dr. H. N. Whitford, Dr. A. van Rossem, Dr. Henry P. Stevens, Dr. David Spence, Dr. Otto de Vries, Dr. W. C. Geer, Dr. Philip Schidrowitz, Dr. G. S. Whitby, Dr. E. B. Spear, Wm B. Wiegand, R. P. Dinsmore, and Dr. H. A. Winkelman.

In addition to these internationally known chemists and engineers, a number of leading rubber and automotive executives will give brief addresses at the banquet to be held in the main ballroom of the Benjamin Franklin Hotel on the evening of Thursday, September 9.

The subject for discussion at the banquet will be "The Relation of Research to Industry" and the principal address on that topic will be made by C. F. Kettering, vice-president of the General Motors Corporation. The Toastmaster will be J. C. Weston, president of the Ajax Rubber Company and of the Rubber Association of America. Other well-known executives who will deliver five-minute talks on "What Research Has Done for the Rubber Industry" will be C. B. Seger, Chairman of the Board of Directors, United States Rubber Company: P. W. Litchfield, president, Goodyear Tire and Rubber Company; J. D. Tew, works manager, B. F. Goodrich Company; Everett Morss, president, Simplex Wire and Cable Company; H. S. Firestone, President Firestone Tire & Rubber Co., and J. F. Norris, president, American Chemical Society.

From present indications the number of reservations for the banquet will greatly exceed original estimates and it appears that the promise of new light on many of the problems in the production, preparation and uses of the various grades of crude rubber is attracting many to this meeting who would not as a rule be interested in the papers usually read at the Rubber Division meetings.

SEND IN YOUR RESERVATION FOR THE BANQUET NOW

On page 430 of this issue there is printed a blank for the convenience of those who plan on attending the Symposium Banquet at the Benjamin Franklin Hotel, Philadelphia, Thursday evening, Sept. 9. The Banquet Committee is desirous of having all reservations in early, and our readers are urged to notify Dr. A. A. Somerville as soon as possible the number of plates to hold.

Use the Blank in this issue for convenience.

The first complete list of speakers and the titles of the papers which they will read follows:

1. Dr. Edwin E. Slosson, Director of Science Service, Washington, D. C.—"The Importance of Rubber in Modern Civilization".

2. Dr. H. N. Whitford, Rubber Association of America, New York City—"The Wild and Plantation Rubber Production of Africa and Tropical America".

3. J. W. Bicknell, U. S. Rubber Company, New York City — "Botanical and Chemical Developments in the Plantation Industry".

4. Dr. A. van Rossem, Director of the Netherlands Government Rubber Institute, Delft, Holland—"Research on Raw Rubber at the Netherlands Government Institute at Delft".

5. Dr. Henry P. Stevens, Consultant of the Rubber Growers' Association, London, England — "Recent Developments in the Preparation of Plantation Rubber".

6. Dr. W. B. McCallum, Botanist, Continental Rubber Company, Los Angeles, California—"The Botany of Guayule Rubber".

7. G. H. Carnahan, President, Continental Rubber Company, New York City—"The Production of Guayule Rubber".

8. Dr. David Spence, Vice-President, Continental Rubber Company, New York City—"The Chemistry of Guayule Rubber".

9. Dr. Otto de Vries, Director of Research, Dutch Rubber Plantations, Delft, Holland — "Developments on the Dutch Rubber Plantations". (This paper will be read by Dr. A. van Rossem.)

10. Dr. William C. Geer, Vice-President, B. F. Goodrich Company, Akron, Ohio —"The Present Status and Future Prospects of Synthetic Rubber". (This paper is by Dr. Weil of Germany, with comments by Dr. Geer.)

11. Dr. Philip Schidrowitz, Consulting Chemist, London, England—"The Direct Use of Rubber Latex with Special Reference to Vulcanized Latex".

12. Dr. Ernst A. Hauser, Frankfurt, Germany—"The Dissection of the Latex Globule Recorded by Micro-Motion Pictures." (Dr. Hauser will not be present but the motion pictures illustrating his subject will be shown.)

13. Dr. George L. Clark, Professor at the Massachusetts Institute of Technology—"X-Ray Contributions to the Analysis of the Structure of Rubber".

14. Dr. G. Stafford Whitby, Professor at McGill University, Montreal, Canada—"Examination of Resins and Effect of Resins on the Quality of Rubber".

15. Dr. Ellwood B. Spear, Vice-President, Thermatomic Carbon Co., Pittsburg, Pa.—"Alternative Materials for Rubber".

16. William B. Wiegand, Binney & Smith, New York City — "The Physical Properties of Crude Rubber Compared with Those of Compounded Vulcanized Rubber".

17. R. P. Dinsmore, Chief Chemist, The Goodyear Tire & Rubber Company, Akron, Ohio—"The Composition and Structure of Rubber".

18. Dr. H. A. Winkelman, Philadelphia Rubber Works, Akron, Ohio—"The Present and Future of Reclaimed Rubber".

Present plans call for papers 1 to 4 to be read at the Thursday morning session, papers 5 to 8, Thursday afternoon, papers 9 to 14, Friday morning and the remaining ones on Friday afternoon.

Goodyear Refinancing Plan

(Continued from Page 431)

tective Committee to suggest a plan of reorganization or refinancing the company. If such plan involves expense to the company this expense must ultimately be borne by the common stockholders. The present strong financial condition of the company does not, in our judgment, justify any refinancing or reorganization along lines which will in any way reduce or impair the equity of the common stockholders in the assets of the company.

"You will recall that the reorganization of 1921 provided for 'management stock' aggregating 10,000 shares, par value $1 each, and gave to this stock the right to elect a majority of the Board of Directors. This 'management stock' was issued and delivered to Clarence Dillon of Dillon, Read & Co. of New York; John Sherwin, Chairman of the Board of the Union Trust Company, Cleveland, Ohio, and Owen D. Young of New York City. Mr. Dillon and Mr. Sherwin thus dominated and controlled and still dominate and control the corporate affairs of the company through the election of a majority of the directors.

"The majority of the holders of the 'management stock' have interests which we believe are in conflict with those of the common stockholders. For this reason it does not seem to us that it is practical or appropriate that the holders of the 'management stock,' or the majority of the Board of Directors whom they select, should represent you if the subject of refinancing or reorganizing the company is to be considered. To fully protect and preserve the equity of the common stockholders we consider it essential that their rights should be asserted by another group of persons.

"At the request of a number of the holders of the common stock the undersigned have agreed to act as a committee of common stockholders for the purpose of examining any plan of reorganization or refinancing that may be proposed, and to take such other action as the committee in its sole discretion or under advice of counsel may decide to be for the best interests of the common stockholders."

On Aug. 23 a suit was filed in the Supreme Court of Ohio to prevent the Goodyear Cmpany from doing business in the state on the ground that the issuance of the "management" stock in 1921 was illegal. An early decision of the suit is expected.

WEEKLY REPORTS WILL SHOW RUBBER ENROUTE

Commerce Department Institutes Service to Show Promptly the Tonnage of Rubber for Which Consuls Have Signed Invoices —First Weekly Report Covers 7,965 Tons.

The Rubber Division of the United States Department of Commerce has announced that the first reports have been received under a new statistical system designed to reveal the tonnage of rubber moving each week from foreign ports to the United States. The first cablegrams show that during the week ended August 14 American consulates sanctioned shipments of rubber for United States ports totalling as follows: From British Malaya, 5,058 long tons; Ceylon, 842; Dutch East Indies, 1,575, total 7,965.

The fact that these reports coming from seven different consulates, were compiled and released on August 17, three days after the end of the week to which they pertain, shows that the system is already working smoothly. The full value of the service will naturally not be apparent until a sufficient number of weeks have passed to establish an average time required for shipment from the various countries of destination. When that is done, the figures are expected to be of considerable assistance in forecasting the amount of rubber which will be arriving at certain times.

Briefly expressed, the system is to have the appropriate American consulates abroad inform the Department of Commerce by cable each week of the tonnage of rubber for which they have viseed invoices. Since it is customary among shippers to ask consuls to sign invoices only shortly before shipments are ready to move, the report that invoices have been viseed literally means that the rubber is started on its trip to the United States.

Such a system of reporting is facilitated by the fact that seven consulates are called upon to sign the invoices covering about 97 per cent of the rubber brought into this country. These consulates are located at London, Singapore, Penang, Colombo, Batavia, Soerabaya and Medan. The other important rubber ports are Belawan Deli, Port Swettenham and Malacca but they come under the jurisdiction of the Medan, Singapore or Penang consulates.

The setting up of the new service is the result of overtures made to the Depart of Commerce by rubber firms several months ago. The practicability of such work was immediately examined but its inception has been difficult for various reasons. However, it is expected that it can be continued hereafter without interruption.

Tire Dealers Meetings

A convention of New England tire dealers will be held in Boston, September 2, under the auspices of the Boston Tire Dealers Association. The National Tire Dealers Association will hold its annual convention in Memphis, November 16-18.

Personals of the Industry

Weller Joins Wishnick-Tumpeer

Wishnick-Tumpeer, Inc., 251 Front Street, New York City, have announced the addition of Walter C. Weller to their sales organization.

Mr. Weller resigned but recently from the sales department of Binney and Smith where he had served for two and one-half years. Prior to his connection with that company, he was assistant purchasing agent of the Howe Rubber Corporation, New Brunswick, N. J., and previous to that, he was employed at the Morgan and Wright factory of the United States Rubber Company at Detroit in chemical, production and tire development work. Mr. Weller graduated from Rutgers University in 1919 with a B.A. degree in chemistry.

New A.S.T.M. Members

Among the firms which have been recently admitted to membership in the American Society for Testing Materials are the Dunlop Tire and Rubber Corporation of America, General Tire and Rubber Company, Harshaw, Fuller and Goodwin Company, Mason Tire and Rubber Company, and Whitehead Brothers Rubber Company.

At the election of officers of the Standing Committees of the Society, F. G. Breyer, Chief of the Research Division of the New Jersey Zinc Company, was elected chairman of Committee D-11 on Rubber Products.

Fisk Personnel Changes

E. H. Broadwell, first vice-president of the Fisk Rubber Company, who has been devoting a considerable part of his time to the manufacturing activities of the company, has been relieved of the principal part of such work by President H. T. Dunn and will hereafter have complete charge of all commercial activities. Although Mr. Broadwell will continue to maintain an office at Chicopee Falls, a much greater percentage of his time will be spent in New York than in the past.

J. D. Anderson, vice-president, who has been located in the New York office, will change his headquarters to Chicopee Falls, in charge of all tire manufacturing at both the Chicopee Falls and Cudahy, Wisconsin, plants of the company. B. H. Pratt, vice-president, will retain supervision over the jobbing division at the Cudahy plant.

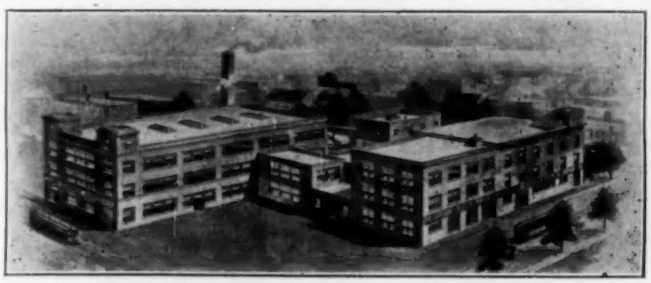
Ober Heads Association

O. H. Ober, vice-president and assistant general manager of the Mansfield Tire and Rubber Company, was elected president of the Manufacturers' Association of Central Ohio at the annual meeting which was recently held at Marion, Ohio.

Brooklyn Shield and Rubber Is Now Rand Rubber Company

The Brooklyn Shield and Rubber Company of Brooklyn, N. Y., which recently changed its name to the Rand Rubber Company, Inc., has been a well-known manufacturer of rubber notions for more than forty years. The change in the company's name is unaccompanied by changes in personnel or policy and the company will continue all other details of its business exactly as before.

Henry P. Rand, president of the company, is credited with being the first American manufacturer of smooth sheet rubber lining for dress shields. In 1880 he organized the Brooklyn Shield and Rubber Company in a factory in Brooklyn where he produced dress shield materials of a sort which had previously been imported from Europe. After three years work, the company was transferred to better quarters at its present location which have since undergone several expansions. The accompanying illustration shows the company's buildings as they appear today.



View Showing Plant of Rand Rubber Company

The manufacture of dress shields held the undivided attention of the company for the first few years, and with the addition of baby pants, were the principal articles manufactured until about the time when the company was incorporated in 1914. Since that time many other items have been added to the line. The manufacture of rubber tea aprons is an important activity. Rubber sheetings and pure rubber sheets, rubber bibs, bathing caps, sanitary requisites and specialties of various sorts are now offered the notion trade in addition to the original lines of dress shields and baby pants.

The founder of the company continues as president of the Rand Rubber Company. L. H. Rand is secretary and E. A. Mason is general manager.

LATE PRICES OF RUBBER AND MOTOR STOCKS

RUBBER

	Last Price Aug. 18	Last Price Aug. 2	Record High	Record Low	1926 High	1926 Low	1925 High	1925 Low	Capitalization	Par Value	Earned Per Share-1925	Earned Per Share-1924	Dividend Rate	Funded Debt
Ajax	9	8½	113	4¾	16	7½	15¾	9½	500,000 sh.	None	$2.01	$1.56	None	$2,385.200
Faultless	42	40	54	25½	43½	34	51	26½	58,208 sh.	None	6.00 (i)	—	$2.	None
Firestone	108½	108½	205	48	125	100	145	96	$3,517,710	$10	27.89	13.60	6	1,500,000 (a)
do 6% pfd.	102	102	105	75	103½	99	102½	97½	8,000,000	100	159.17	83.40	6	——
do 7% pfd.	96½	96½	101	55	100	96½	101	96	18,380,900	100	140.24	67.79	7	——
Fisk	18⅜	17¾	55	5⅞	26¼	14¼	28¾	10½	811,827 sh.	None	4.26	.85	None	20,200,000
do 1st pfd.	80	80	116½	38⅛	84¼	76⅞	116½	75½	18,198,900	100	30.60	11.80	7	——
General	150	141	415	140	375	140	415	233	1,995,400	25	44.35 (b)	34.89 (b)	None	None
do pfd.	107	106¼	110	101	110	106	105	101	1,072,100	100	175.84	139.83	7	——
Goodrich	50¼	49	93⅜	16	70¾	45½	74⅜	36¾	601,560 sh.	None	21.74	9.11	4	38,162,500
do pfd.	96	103½	114½	62½	106½	95	102	92	37,472,000	100	51.57	27.95	7	——
Goodyear Com.	35⅝	—	49¾	7½	40	28	49¾	24¾	830,768 sh.	None	15.62	5.14	None	55,726,000
do pr. pfd.	108½	108	109	88	108⅝	105⅜	109	103	15,000,000	100	140.04	81.08	8	——
do pfd.	107¾	105½	114⅝	22	109¾	98½	114⅝	86⅛	65,079,600	100	29.45	16.07	7	——
Hood	57⅞	57¼	72	43	68¾	57¼	72	52	120,000 sh.	None	15.48	—	4	6,000,000
India	—	—	176	30	165	30	176	160	63,659 sh.	None	6.69	4.47	2.50	None
Intercontinental	16½	16⅝	35	2	21¾	13½	19⅞	5	603,824 sh.	None	1.53	2.93 (c)	1	None
Kelly Springfield	13¼	13⅛	164	9¾	21½	12¼	21⅝	12¾	8,896,000	25	1.93	nil	None	6,500,000
do 1st pfd.	61	64	145	40	74¾	51	74	41	2,950,000	100	49.24	51.72 (d)	None	——
do 8% pfd.	51	56	110½	33	73¼	51	72	43	5,264,700	100	24.23	32.34 (d)	None	——
Lee	7⅞	8½	56½	8	14	7⅞	19	11⅝	300,000 sh.	None	1.40	nil	None	None
Miller	38¾	35½	44¾	30	44¾	30	246 (e)	30	260,088 sh.	None	11.50	29.28	2	None
do pfd.	100	101	114	45	104	98½	106½	100	12,451,600	100	28.38	25.91	8	——
Mohawk	24½	—	91	35	65	35	85	55	20,000 sh.	None	22.16	10.31	None	None
do pfd.	70	—	80	70	80	70	80	79⅝	1,963,265	100	29.57	17.49	None	——
Norwalk	7⅛	8	19¼	7⅛	15¼	7½	19¼	12½	1,495,000	10	2.22	nil	.80	None
Selberling	24½	23	37	19⅛	28½	19⅛	37	23⅝	192,626 sh.	None	4.03	5.50	None	1,500,000
do pfd.	94	—	101½	92	97	92	101½	95½	818,600	100	137.29	95.50	8	——
Star	—	13	20	10	15	12	20	10	17,322 sh.	None	—	1.60	None	None
U. S. Rubber	59⅞	58⅞	143¾	7	88¼	50¼	67½	47	81,000,000	100	14.92	3.88	None	113,120,800
do pfd.	107	106¼	123½	30¼	109	101½	108⅞	92¾	65,110,000	100	26.56	12.85	8	——
U. S. Rubber Reclaiming	—	12	21¼	11	21¼	11	17¼	11	86,670 sh	None	nil	nil	None	None

MOTORS

Dodge Bros. "A"	30⅝	33½	48¾	21¼	47½	21¼	48¾	21¾	1,934,563 sh.	None	6.57	4.76	None	59,485,000
General Motors	205⅞	201	225¾	55¾	225¾	113¼	149¾	64⅝	8,600,000 sh.	None	19.15	7.37	16 (f)	23,724,000 (g)
Hudson	67¾	74¼	139½	19½	123¼	49⅝	139½	33¾	1,596,660 sh.	None	16.05	6.11	3.50	None
Hupp	27½	24	31	2⅛	28⅝	17	31	14¼	9,138,090	$10	4.15	1.76	1	None
Jordan	23¾	23⅞	66	21	66	21	65	35⅜	126,000 sh.	None	2.91	4.03	3	None
Moon	23⅛	23⅞	42	9¼	37⅜	23⅛	42	22¾	180,000 sh.	None	6.13	3.11	3	None
Nash	58	61⅛	66	52	66	52	488 (e)	193½ (e)	2,730,000 sh.	None	54.13 (h)	28.43 (h)	3 (f)	None
Packard	37⅜	42½	48½	9¼	45¼	31⅜	48½	15	26,147,220	10	4.84	1.67	2.90 (f)	None
Paige	16⅛	16¼	46½	11	28½	13⅜	33	17⅝	676,474 sh.	None	3.04	2.14	1.80	1,000,000
Pierce-Arrow	32	28¾	99	6⅛	43¼	19	47¾	10⅞	328,750 sh.	None	2.26	nil	None	3,950,000
Studebaker	54¾	57¾	68⅝	30	61⅜	47	68⅝	41¼	1,875,000 sh.	None	8.34	6.81	5	None
Willy-Overland	28	29¼	34⅞	4½	34	18	34⅞	9⅛	12,635,250 sh.	None	4.03	nil	None	7,475,000

(a) Also guarantees $2,000,000 subsidiary's 6% bonds. (b) On 39,908 shares. (c) On 31,370 shares. (d) Deficit. (e) Old $100 par stock. (f) Partly extra. (g) Subsidiaries bonds guaranteed. (h) On old $100 par stock. (i) estimated.

Ajax Earnings

The Ajax Rubber Company and its subsidiaries have reported a profit of $324,279 for the six months ended June 30, 1926 after interest, depreciation and taxes. From this a fund of $250,000 was appropriated for inventory reserve, leaving a net profit of $74,279, which is equivalent to an earning of 15 cents a share on the 500,000 shares of no-par stock. This compares with earnings of 52 cents a share in the first half of 1925, when the net profit was $262,394.

Miller Rubber Report

Miller Rubber Company reports for six months ended June 30, 1926, net profit of $744,101 after depreciation, Federal taxes, etc., equivalent after dividend requirements on 8 per cent preferred stock to 95 cents a share earned on 260,000 no par shares of common stock as compared to $8.31 a share for the same period last year.

Volume of business was increased 16 per cent over the same period of last year, and the decreased earnings are accounted for by the decline in the price of rubber. Miller common is on an annual dividend basis of $2 a share. Although first half-year dividends of $1 a share were not fully covered, it is believed payments on this issue will continue, officials said.

Plants are now operating on a capacity basis, and low dealer stocks, in conjunction with increased demand for tires, indicate a continuance of full production.

General Motors Stock

The expected 50 per cent stock dividend of the General Motors Corporation was declared on August 12. It meant the issuance of 2,900,000 additional shares of stock valued, at the current rate on the day of its declaration, at $590,150,000.

Prior to the stock dividend, the value of General Motors stock had mounted to a high of 225¾ from a low of 113¼ last spring. Its price on August 18 was 205¾. An extra cash dividend is expected to be declared later in the year. In addition to the regular 7 per cent rate, stockholders of the company have already received two extra cash dividends this year. Earnings for the full year are expected to reach $200,000,000.

General Motors has sold 723,730 automobiles during the first seven months of 1926 as compared with 446,567 in the corresponding period of last year.

Dividends Declared

A quarterly dividend of 2%, payable September 1, has been declared by the Miller Rubber Company on its preferred stock. The Boston Woven Hose and Rubber Company has declared a quarterly dividend of $1.50, payable October 1, to stockholders of record September 1.

Mason Earns $314,390

On gross sales of $6,254,000 during the first six months of 1926 the Mason Tire and Rubber Company, Kent, Ohio, reported net earnings of $314,390.13 after a decrease of $217,443 in inventory values was cared for and all taxes, except Federal, had been paid. After deducting accrued bond interest, amortized bond discount and interest there remained a balance of $200,717. Of this amount, $175,588 was set aside for the reserve account and $25,000 was transferred to surplus.

Rubber Bond Quotations

(As of August 18, 1926)

Ajax 8s 1936	103½
Fisk 8s 1941	116¾
Goodrich 6s 1947	106⅜
Goodyear 8s 1941	120⅞
Kelly-Springfield 8s 1931	105
U. S. Rubber 5s 1947	94⅛
U. S. Rubber 7½s 1930	107¼

U. S. RUBBER EARNINGS LESS ON BIGGER SALES

Half-Yearly Sales Exceeded One Hundred Million But Net Income Is Almost One Million Below 1925—Crude Rubber Reserve and Plantation Funds Not Used.

Sales of the United States Rubber Company for the six months ended June 30, 1926, amounted to $110,113,986, an increase of $7,583,859, compared with the corresponding period of 1925.

Net income, before interest on the funded indebtedness, but after all other charges, including depreciation of plants, amounted to $8,156,842. Interest on the funded indebtedness amounted to $3,241,174, leaving net income of $4,915,668 after all charges, compared with net income of $5,875,204 in the first half of 1925.

As of June 30, 1926, current assets amounted to $169,964,889.

No part of the reserve of $3,000,000 established at the close of 1925, to be applied against the cost of crude rubber to be received during 1926, has as yet been used.

C. B. Seger, chairman of the company, in his remarks to stockholders says:

"The results of operations of the plantations owned by the company have not been finally determined, but latest available reports indicate that they have been satisfactory. The credit balance in the open account with the plantations companies increased $4,087,921, which, added to the $7,338,305 as shown in the consolidated general balance sheet as of December 31, 1925, made a total of $11,426,226 as of June 30, 1926, no part of which has been included in the income of the company.

"Inventories of finished goods and raw materials, and commitments, were at sound values except as to the uncertainty regarding crude rubber, the value of which cannot be definitely determined until the final results for the year shall have been ascertained. The reserve of $3,000,000, and the profits of the plantations companies, neither of which has been used, are more than ample to offset any adjustment that may be found necessary.

FINANCIAL STATEMENT OF INTERCONTINENTAL

For the six months ended June 30, 1926, the Intercontinental Rubber Company and subsidiaries have reported a net profit of $612,067 after depreciation, Federal taxes and other charges. This is equivalent to $1.03 a share earned on the no-par stock outstanding.

Gross profits for the period was $905,397; expenses, $127,340; depreciation and other items, $73,000; and Federal taxes, $92,900. After dividends of $592,207, a surplus of $19,860 remained.

The consolidated balance sheet at June 30, 1926, showed current assets of $3,243,646 and liabilities of $274,761. The company had more than $2,500,000 in cash and out on call loans.

Star Rubber Active

Bearing out predictions made a few months ago by its officials, the Star Rubber Company, Akron, Ohio, has reported July sales well in excess of $300,000. D. A. Grubb, general manager, has announced that July was also a banner month from a production standpoint, the tire output being larger than in any previous month in the history of the company. The daily ticket now calls for 775 tires and 900 tubes.

Norwalk Shows a Loss

The Norwalk Tire and Rubber Company has reported a net loss of $111,858 for the nine months ending June 30, 1926 after deducting expenses, depreciation and all other charges. The gross profit for the period was $424,915 and other income $14,745. Against this were charges of $554,519, including $96,861 for depreciation, discounts and other items.

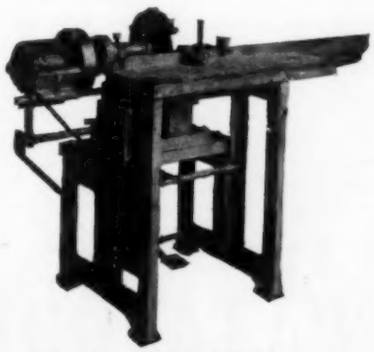
GOODYEAR EARNS LESS ON INCREASED BUSINESS

The Goodyear Tire and Rubber Company has reported net sales, exclusive of subsidiary companies, of $97,835,456 for the first six months of 1926, as compared with $78,130,645 for the corresponding period last year. There was a consolidated net income of $4,014,873 after interest, Federal taxes and other charges, equal, after allowing for the half year's dividends on the 8 per cent prior preference stock and the management 6 per cent cumulative stock, to $5.02 a share earned on the $65,079,600 outstanding 7 per cent cumulative preferred, on which back dividends amount to 29¾ per cent.

Allowing for the regular six months' dividend requirements on the 5 per cent cumulative preferred, the balance is equivalent to $1.43 a share earned on the 830,750 shares of no par common. This compares with net income of $6,011,407 after interest, Federal taxes and special reserve of $3,000,000 for raw material, equivalent to $8.31 a share on the 7 per cent preferred and $3.76 a share on the common for the first half of 1925.

Fisk Sales Lower

The report of the Fisk Rubber Company for the third fiscal quarter, ended July 31, shows net sales of approximately $21,500,000 as compared with $24,500,000 in the third quarter of 1925. The total value of the sales for the first nine months of the fiscal year, which ends October 31, was $49,917,000 as against $54,300,000 for the same period last year. The net profits for the quarter after deducting all charges were approximately $1,500,000 which makes the net profits for the nine months approximately $3,624,593, equivalent after all dividend charges to $3.06 a share on the 811,827 shares of common stock outstanding.



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Heavy type will cut up to three inch seven ply steam hose.
Makes 1100 cuts per hour. Cuts short lengths of tubing or solid stock, automobile connections, steam hose, etc., to any required length.
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VANDERBILT ACQUIRES CAPTAX SALES RIGHTS

Rubber manufacturers will be interested in the announcement made by Dr. A. A. Somerville that the R. T. Vanderbilt Co. has secured from the Goodyear Tire & Rubber Co. the exclusive sales rights to Captax, the accelerator which was developed by Goodyear chemists several years ago and successfully used in its plant since its invention. Many advantages are claimed for this accelerator whose chemical designation is mercaptobenzothiazole. Full technical details on its uses and properties will be published in the September 10 issue of THE RUBBER AGE.

Has Rare Photograph

What is said to be the only complete picture of a solar eclipse ever taken has been brought to Akron by Captain Barnett Harris, who has returned after making a survey of the rubber plantation districts of the Middle East for the B. F. Goodrich Rubber Company. While in the Orient, Captain Harris succeeded in filming the total eclipse of the sun which occurred on January 14th of this year. He also collected some excellent pictures on the production and marketing of crude rubber, and these, together with the solar eclipse pictures, will be used in a program of "visual education" to be sponsored by the Goodrich Company.

LESS RUBBER IS USED AS IMPORTS INCREASE

Decline in July Consumption Is 1,622 Tons While Arrivals Are 10,000 Tons Over May—Value of July Imports Drops to 41 Cents Per Pound From 62 Cents in June.

Figures recently released by the Rubber Association of America show that a marked addition was made to crude rubber stocks in the United States during July. The Association reports arrivals during the month to have been 37,087 long tons as compared with 27,915 in June and 39,107 in May. During the first seven months of 1926, according to the same source, total rubber imports have amounted to 245,724 long tons, an increase of 30,019 over the corresponding period of 1925.

While imports were showing this decided jump, July consumption figures fell below all estimates which had been made in advance and were below the June figures as well. The consumption estimates had varied from 28,000 to 33,000 tons but the figure, when released by the Rubber Association and raised to 100%, proved to be 27,577. This set a new low for 1926. June consumption was 28,599 tons, May was 29,364 and the total for the first seven months was 214,472 tons.

During the first seven months of 1925 the United States used 234,233 tons of rubber. The decreased consumption so far this year therefore amounts to approximately 20,000 tons. In every month since February the 1926 consumption has been well below that of the corresponding month of 1925.

Preliminary figures issued by the Rubber Division of the United States Department of Commerce show July arrivals at New York and Boston to have been 36,637 tons. The rubber imported through those two ports during recent months has represented 96 per cent of the total tonnage imported into the United States. Raised to 100%, the imports according to this source would be 38,164 tons. The average value per pound of rubber in July, reported by the Department of Commerce, was 41.04 cents compared to 61.85 in June, a drop which is fully as striking as the June increase over May, when the average import value was 55.35 cents. Apparently the small June imports of 24,900 long tons consisted chiefly of rubber purchased under forward contracts at high prices, while July imports consist largely of rubber purchased recently. The average price per pound of imports during the two months, June and July, was 39.46 cents, compared to 55.35 for May, 62.99 for April, 74.76 for March, 79.78 for February, and 76.36 for January.

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2. Low accelerator cost.
3. Ease of handling.
4. As a booster of the cure of tires in which the slower accelerators are used.
5. Effective in high reclaim stocks as well as in stocks without reclaim.

ACCELERATING STRENGTH DATA

Rubber	100
Zinc Oxide	5
Sulphur	3
Monex	0.1

Cure in strip mold	60′/5 lbs.	30′/10 lbs.	45′/10 lbs.	60′/10 lbs.
Tensile strength	3955	3510	4235	4305
Elongation	770	820	810	830

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CATALPO!

TIRE INDUSTRY OUTPUT VALUED NEAR BILLION

Preliminary Report of Census Bureau Shows Greatly Increased Value of Tires and Tubes Produced in 1925—Rubber Association Figures Almost 80% Complete.

The wholesale value of the rubber tires and inner tubes produced in 150 American factories in 1925 was $950,392,000, according to the Bureau of the Census which has released a preliminary report as a result of its industrial census among the tire and tube manufacturers. It is possible that before a final report is issued additional reports will be received from other manufacturers who produced this class of goods. However, it is a practise of the Bureau to withhold preliminary reports until it is sure that the figures are virtually complete and it accordingly appears that the American tire business fell but little short of doing a billion dollar business in 1925.

In 1923, 160 tire and tube manufacturers reported the production of goods valued at $644,193,697. The considerable increase in 1925 was due not only to a larger output but the wholesale price per unit was also higher, due to the substantial price increases which followed higher crude rubber prices in 1925.

Casings Exceeded 57,000,000

The Bureau of Census report also shows that the number of pneumatic casings produced by the 150 manufacturers in 1925 was 57,481,000. The inner tubes numbered 73,585,000 and the solid tires, 1,024,000.

Incidentally, the casing production figure of the Census Bureau appears to show that the monthly tire production figures of the Rubber Association have been more complete than has been estimated. The latter organization, in its twelve monthly reports during 1925, reported a production of 45,633,316 casings. If the Census figures be taken as practically complete, the Rubber Association reports are seen to be more than 79 per cent representative of the entire industry instead of the 75 per cent which has been estimated and widely used. It has been known that some tire statisticians have believed that the Rubber Association figures were at least 77 per cent complete and it appears that their view has been justified. In 1923, the Rubber Association reported a tire production that was almost exactly 75 per cent of that reported by the Census Bureau.

The report of the Bureau of the Census shows further that the tire industry of the United States employed 84,000 wage earners in 1925 and that the wages paid amounted to $124,132,000. The cost of the materials used was $574,564,000 and the value added by manufacture was $375,828.

Reports on the 1925 operations of other sections of the American rubber industry are not yet ready. A complete report will be ready during the latter months of the year.

Tuscan Increases Output

The Tuscan Rubber Company of Carrollton, Ohio, is enjoying an unusually prosperous season, according to officials of the company who say that they are operating on a better production basis than at any time in the past three years. The company has decided to give preference to the production of tires but will continue to make druggists sundries.

Study European Production

William Stephens, general superintendent of the Goodyear Tire and Rubber Company, and Harry E. Blythe, superintendent of the Los Angeles factory of the same company, are making a six weeks tour of Europe during which they will study rubber factory operations.

Foresight that Insures

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CONFIRMATION REFUSED IN SALE OF BERGOUGNAN

Judge Runyon of the United States District Court filed an order on August 9 formally setting aside the sale of the plant and equipment of the Bergougnan Rubber Corporation of Trenton, New Jersey, to William A. Weinmann, on the grounds that he had stifled competition at the receiver's sale by entering into a previous agreement with other bidders.

In a separate order, the Judge also refused to confirm the joint purchase of the rubber firm's personal property by Mr. Weinmann and the Citron-Byer Company.

Mr. Weinmann, acting in the name of a syndicate, bid in the plant and equipment for about $150,000 on June 18. The parent company, the Societe Generale des Etablissements Bergougnan, and other stockholders interposed an objection to the confirmation of the sale by the court, charging that bidding was kept down by the alleged syndicate. Investigation of these charges led to the above action by the court.

Seiberling Statement

Net earnings of the Seiberling Rubber Company for the six months ended June 30, 1926 were $182,335. The sales for the same period totaled $7,355,568. The current assets on June 30 were $5,592,982 and the current liabilities $3,004,308.

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RUBBER GOODS IMPORTS LESS THAN LAST YEAR

Value of Rubber Goods Brought Into the United States Declines Slightly This Year —Golf Balls Continue to Account for More Than Half of Total.

The values of the manufactured rubber goods imported into the United States during the first half of 1926 was $1,279,667 as compared with imports of $1,317,958 in the same period last year. This decline is largely the result of the decrease in the value of tire imports from $68,000 in the first half of 1925 to $41,515 this year. The larger volume of tire imports in 1925 was due chiefly to the fact that 29x4.40 balloon tires were then being brought in from France in considerable quantities.

The golf balls imports were valued at $691,409 or over half the total value of all the rubber goods imported. During the first six months of 1925 the value of the golf ball imports was $684,291.

Imports of druggists rubber sundries increased from $81,186 in the first half of 1925 to $109,743 this year, of which the United Kingdom supplied $94,287. Imports of hard rubber combs were reported separately for the first time in the 1926 statistics, and the value of these products coming into the United States in the January-June period of 1926 was $28,011. The imports of other manufactures of hard rubber in the same period had a total value of $138,210. Germany and Austria are the chief suppliers of these hard rubber goods. The imports of machinery belting, including rubber, declined from $297,143 in the first six months of 1925 to $270,779 in the same period of this year. The United Kingdom is the chief source of these imports.

Sheeting Added to Line

The United States Rubber Company has decided to devote part of the glove and shoe departments of its factories at Naugatuck, Connecticut, to the manufacture of rubber sheeting. According to Treasurer W. T. Rodenbach of the glove and shoe company, the rubber shoe trade has been rather slow, but the sundries trade has continued good.

Dunbar With Roden

Wilmer Dunbar, well-known consulting rubber engineer, recently joined the Roden Laminated Tire Co., of Union City, N. J. as general factory manager in charge of manufacturing operations. The Roden tire contains a filler of a series of discs of inner tube stock permanently vulcanized to the inside of the tread, and is said to give riding qualities comparable to a pneumatic tire with regular inner tube.

CATALPO!

CALLS SINGLE SOURCE OF RUBBER DANGEROUS

Agriculture Department Official Says Best Reason For Planting Rubber in New Areas Is To Escape Danger That Pest or Epidemic May Sweep Middle East.

The danger which surrounds the world's supply of plantation rubber so long as it is drawn from one comparatively small area where large acreages of rubber trees could be destroyed by a single new and destructive beetle or by a new fungus has been emphasized in a statement issued by Dr. H. S. Kellerman, associate chief of the Bureau of Plant Industry, Department of Agriculture. With production centralized as it is at present, the danger of the spread of an insect pest or a disease epidemic among the trees is rendered extremely high, in Dr. Kellerman's opinion.

The possibility that such a pest or epidemic might appear is the most important reason why rubber production should be developed on this continent and elsewhere than in the East Indies, Dr. Kellerman pointed out. The question of the British control of prices by restriction of production, or the importance of rubber from a military standpoint and the necessity of a source of supply in case of war are minor considerations compared with the possibility of the supply being entirely cut off or suddenly reduced to small proportions.

There are a bark disease and a leaf disease of rubber trees on plantations in the East Indies which are now considered dangerous, but which have so far been kept well under control. No one can tell, however, when an epidemic disease might start which would get beyond control.

That such a thing is not impossible, Dr. Kellerman said is illustrated by what has happened in the chestnut forests of a half dozen of our own Eastern States. The chestnut blight has within a few years turned magnificent stands of chestnuts into mere memories.

There are also several other plant diseases and pests in this country which are spreading. The white pine blister rust is doing considerable damage to white pine, the European corn borer is spreading and threatening the corn belt, the Japanese beetle which feeds on many plants is gaining ground in Pennsylvania, New Jersey and Delaware. Just what the results of these invasions will be we do not know, but they show how pests within a few years can occupy large areas in spite of control measures.

Rubber production on plantations in Venezuela and Dutch Guiana was started some years ago, Dr. Kellerman said, and it is claimed that it was dropped as the result of a devastating leaf disease.

Dr. Kellerman spoke also of the possibility that a larger percentage of the world's rubber supply would be secured from rubber plants of sorts now considered unimportant. Cultivated guayule was mentioned particularly.

Whether rubber growing will be developed in the United States on a commercial scale, Dr. Kellerman said, will depend chiefly on economic factors. The chief need, in his opinion, is not for a home grown supply of rubber but for several different sources of supply so that the United States and the rest of the world could not be cut off by a single disease epidemic.

Ayers Leaves Goodrich

Dr. H. D. Ayers has resigned as head of the Department of Physical Research of the B. F. Goodrich Company. Dr. Ayers entered the employment of the Goodrich Company in 1913 under Dr. W. C. Geer, then chief chemist. For the past two years he has been in the tire development department and is the holder of several tire patents. He is a member of the University Club of Akron, the American Physical Society, the Society of Automotive Engineers, and the American Association for the Adoption of Science.

Dr. Ayers would make no announcement as to his future plans except to say that he intended to take an extended vacation.

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Akron Representative: F. F. Dugan, 617 Second Nat'l. Bank Bldg.

Cork and Latex Shoe Sole

David A. Cutler, president of the Alfred Hale Rubber Company of Atlantic, Mass., has taken out and assigned to his company a patent on a method of making a composition of granulated cork and latex to be used in the manufacture of shoe soles. The process consists of mixing the granulated cork with the latex without coagulation, subjecting the mixture to pressure while coagulation of the latex proceeds, and subsequently relieving the mixture of pressure.

Vulcanization Process

A patent covering the use of lubricants in the vulcanization of rubber articles has been granted to Charles E. Maynard of Northampton, Mass., which comprises dusting the article with finely powdered sericite, placing the article in a mold, and subjecting it to heat and pressure. He has assigned the patent to the Fisk Rubber Company of Chicopee Falls, Mass.

To Sell Defiance Cords

Another department store has entered the ranks of the tire retailers with the announcement by Abraham and Straus of Brooklyn that they will offer Defiance Cords in a new tire department. According to the announcement, "the second largest tire manufacturer in the world" has cooperated with the store in getting the tire on the market. A full range of sizes is offered at prices said to be lower than those commonly asked for standard tires.

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WEEKLY MARKET REVIEW ON REQUEST

INCREASED TIRE SALES DECREASE INVENTORIES

Greater Demands for Tires and Tubes Attributed to Warm Weather and Lower Prices—Factories Operating on High Schedules—Inventories Start Downward.

Whether the recent spell of warm weather throughout the country or the decrease in tire prices announced last month stimulated tire sales, or whether it was a combination of both, the fact remains that tire plants are experiencing demands for tires and tubes which are not only keeping their production at a high level but are at the same time reducing very materially the large inventory which had accumulated during the lean months in the spring.

Reports from Akron and other tire centers state that in many cases plants are operating on a 24 hour basis to fill the demands for replacement business. Akron is producing around 130,000 tires daily with a somewhat larger number of tubes. The same conditions are holding true at plants in other districts with the result that tire manufacturers are expecting to end up the second half of the year showing increased profits over the first half.

According to W. F. Pfeiffer, General Manager of Miller Rubber Co., Akron, Ohio, consumers are now buying tires freely with the result that dealers' stocks are being rapidly depleted. He estimates that dealer stocks are 20% lower than a year ago and that they will not be able to meet demands unless their stocks are replenished soon.

An analysis of Rubber Association figures for tire and tube production, inventory and shipments through June, recently released, naturally fails to reveal any serious depletion in manufacturers inventories since the increased demand for tires did not materialize until after the July 5 price reductions. Balloon tire inventories have continued to show an increase since the beginning of the year except for a slight drop during May. At the end of June manufacturers had 4,185,049 balloon casings on hand as against 3,875,580 at the end of May. Shipments during June were 2,369,906 while production was 2,746,975 compared with May shipments of 2,279,264 and a production of 2,605,859.

Inventories of high pressure cords have on the other hand declined from a record high of 6,483,894 at the end of April to 5,629,559 at the end of June, a figure which is close to the inventory at the beginning of the year. Similarly, inventories of high pressure inner tubes have been decreasing in the past three months while balloon tubes had not begun to show a decline by the end of June.

CATALPO!

Philippine Rubber Situation Marked by Four Developments

Rubber Land Act in Lower House of Philippine Legislature Opposed by Quezon—Carmi Thompson Expected to Urge That Independence Question Be Definitely Delayed.

Interest in the possibility of a large Philippine rubber development has continued to grow during the last two weeks which have been marked by four major developments.

First, a Rubber Land Act to allow one corporation to lease up to 450,000 acres of rubber lands was introduced into the Lower House of the Philippine Legislature.

Second, Manuel Quezon, President of the Philippine Senate, announced his own opposition to the Rubber Land Act and expressed the opinion that the Filipinos would never consent to any change in the land laws.

Third, Carmi Thompson, emissary of President Coolidge now in the islands, was reported as having made up his mind to recommend that Congress enact legislation definitely postponing consideration of the independence question for a period of twenty-five or forty years.

Fourth, newspapers and politicians in the United States opened a campaign of charges that the Administration was proposing to sacrifice the Philippines in the interest of the American "rubber trust".

The Rubber Land Act was introduced in the Philippine legislature on August 9 in the general form outlined in the last issue of THE RUBBER AGE. Instead of restricting one corporation or individual to 2,500 acres of rubber lands, it provides for leasing a maximum of 450,000 acres of such lands to one corporation. The bill stipulates that 61 per cent of any such corporation must be owned by citizens of the United States or of the Philippines. The land may be leased for seventy-five years after which time it reverts to Philippine public ownership without restrictions.

The bill would require that 25 per cent of the leased acreage be planted to rubber within fifteen years after the execution of the lease. After the sixth year the lessee would be required to pay an annual rental of 12 cents per acre. The bill also provides that no lessee shall hold more than 50,000 acres in one tract and that each tract leased must be separated from any other tract held by the same lessee by a distance of one mile.

With the powerful Quezon aligned against the Rubber Land Act, as it has been known all along that he would be, the bill has almost no chance of passage. If he could be induced by reasons of expediency to change his attitude toward it, there would be a liklihood of its adoption. Even if such a bill were passed, the political uncertainty of the islands would remain as a strong barrier to the investment of American capital.

With regard to giving prospective investors some idea of the conditions which would surround their investments a few years hence, Colonel Thompson's proposed recommendation of Congressional action is believed by many to have considerable merit. If it were known that for twenty-five, thirty or forty years there would be no danger of a radical change in the status of the islands, the chances for interesting those with money to invest would be much better.

The announcement in American newspapers of Colonel Thompson's proposed recommendation was the signal for a statement by Representative Oldfield of Arkansas. Mr. Oldfield is a Democrat and has disagreed frequently with the policies of the Coolidge administration. In the Thompson proposal he saw a sinister threat to sacrifice the Philippine Islands in favor of large American rubber interests. Without outlining the foundation for his remarks, he issued a statement of which the following is a part:

"It was very apparent from the first that Thompson did not represent the President but the Rubber Trust when he was sent on that mission although the American taxpayers will be called upon to foot the bill.

"Thompson's suggestion about delaying independence for the Filipinos came from the rubber interests and his recommendations were framed even before he left for the islands. Congress will never enact any such legislation as the majority of the members can see the sinister motives back of the propaganda to grab the Philippines to exploit them in behalf of the rubber barons".

Representative Oldfield is chairman of his party's Congressional Campaign Committee. He disagreed also with the Bacon bill introduced before the last session of Congress and denounced the rubber survey of the Philippines carried out two years ago by experts of the Departments of Commerce and Agriculture.

Some newspapers, notably the New York *World*, have published editorials along the line taken in Mr. Oldfield's statement.

Collapsible Rubber Boat on British Market

A collapsible rubber dinghy, known as the "Airaft" and shown in the accompanying illustration, has just been offered the British public and is expected to become popular throughout Great Britain. In the past this craft has been supplied as emergency equipment with all machines furnished the British Air Ministry. Its success having been proven, it is continued as standard equipment in that connection and has been released to the general public as well.

The Airaft's popularity with British water lovers is expected to arise from its collapsible and light weight features. When deflated the dinghy can be stowed in a bag eighteen inches long. Its weight is only a few pounds as is seen from the case with which the girl in the illustration is carrying it to the water. After inflation, which takes only a few minutes, the craft is seven feet long and seats two passengers. It draws only two inches of water and is extremely buoyant.

Photo by Herbert

NO CHANGE MADE IN RUBBER EXPORT BASIS

The British Colonial Office announced formally on August 6 that there will be no change in the general rubber restriction provisions for the quarter beginning August 1 and ending October 31. In other words, the pivotal price will remain at 1s. 9d. (42 cents), and if the average London price for ribbed smoked sheet rubber should fail to meet that figure, the permissable exports of rubber from British Malaya and Ceylon will be cut back to 80 per cent during the quarter beginning November 1 and ending January 31. This formal announcement substantiates the informal notice which was reported in the last issue of THE RUBBER AGE.

The formal statement of the Colonial Office left the way open, however, for other changes in the rubber restriction provisions by the qualification that present conditions would pertain "unless and until it may be decided to modify them". The two ways in which changes may appear logical relate to the assessment of standard production and the carrying over of export coupons from one quarter to another. Both of these points arise from the fact that rubber producers both in Malaya and Ceylon have been unable to ship as much rubber as their standard productions have called for since they were revised on May 1 of this year.

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Manufacturer of

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RUBBER INDUSTRY ON $1,250,000,000 BASIS

Quarterly Report of Rubber Association Reveals That 1926 Business is Surpassing That of 1925—Tire Group Alone Will Roll Up Sales Total of Almost Billion.

A steady increase in the sales volume of all rubber products is shown in the quarterly statistical statement issued by the Rubber Association of America on August 6. If opinions in the tire trade that the last half of the year will bring much better sales than the first half are borne out, the year's showing will be a most impressive one.

The total sales value of shipments of all rubber products for the quarter ending June 30 was $320,164,000 compared with $300,924,000 for the corresponding quarter of 1925. This volume, figured on an annual basis, is at the rate of slightly over one billion and a quarter dollars compared with an actual value of $1,142,096,000 for the year 1925. However, averaging the sales values of the first two quarters, the total for this year would be $1,162,122,000 or about $20,000,000 above last year. There is every indication that the second half of the year will exceed the first half by a large margin, with the liklihood that the total will closely approach the billion and a quarter mark.

The sales value of tires, tubes, tire sundries and repair materials for the second quarter was $237,936,000 as against $225,692,000 in the second quarter of 1925. At the present rate of shipments, the total for this year would be in excess of $950,000,000 but if the average for the first two quarters is used, the total for the year would only be $837,578,000. These figures compare with $803,659,000 total for last year, indicating that 1926 tire business will exceed last year by a wide margin.

Of the rubber consumed during this quarter, 85.5% was used in tires and tire sundries; 4.8% in boots and shoes; 4.3% in mechanical goods; 1.3% in heels and soles; .8% in insulated wire; .6% in rubber sheeting; .3% in hard rubber products; .2% in rubber flooring and .2%, the balance, in miscellaneous products.

Raises Rubber Plant Bid

A new bid of $26,000 for the plant of the Studebaker-Wulff Rubber Company of Wadsworth, Ohio, has been filed by a group of Akron and Pittsburgh men.

This raises the previous bid of $25,000 which was made by S. C. Durling of Wadsworth at the time of the auction was held. The bids are subject to confirmation by the court.

CATALPO!

GOVERNMENT WILL USE MORE PILOT BALLOONS

A considerably increased demand on the part of the government for pilot balloons is foreseen in the special appropriation by the last session of Congress of $75,000 for the establishment of twenty-one new pilot balloon stations along civil airways, including those operated for and by the Postoffice Department. The appropriation will be expended by the Weather Bureau, Department of Agriculture.

The value of the pilot balloon in providing information as to air current conditions is well known. The use of such equipment is coming into increasing favor since it allows fliers to operate with a greater degree of safety than is otherwise possible. The new stations at which the pilot balloons will be used include large cities throughout the country. At each one wind velocity and direction and the height of clouds will be determined by observations with pilot balloons.

Lower Rates to Pacific

In view of the recent revision made by the railroads in the all-rail rates on pneumatic and solid tires moving from eastern ports to Pacific coast ports in carload lots, the United States Intercoastal Steamship Conference has concluded to revise its rates likewise for such goods moving via the Panama Canal. Effective July 23, the rate on pneumatic tires has been changed from $1.00 per 100 pounds to $.75 while the rate on solid tires has been cut from $.75 to $.50. In mixed carload lots of pneumatic and solid tires, the pneumatic tire rate will apply.

AUSTRALIA INCREASES DUTY ON RUBBER TIRES

A considerable increase in the import duties imposed on rubber tires and tubes entering Australia has recently been made, according to the tariff division of the Department of Commerce. The general rate, which applies to imports from the United States, on pneumatic casings weighing 2½ pounds or less and tubes weighing 1 pound or less has been increased to 55% ad valorem. It was formerly 40%. Other pneumatic casings and tubes will pay a specific duty of 3s. per pound or 55% ad valorem, whichever yields the higher duty, instead of 2s.6d. or 40% as in the past. The rate on all other rubber tires has been increased from 40 to 55% ad valorem. Corresponding increases have been made in the British preferential rate, which is about one-third lower than the general rate which American tires must pay.

Western Expanding

In order to care for its increasing business the Western Rubber Company of Goshen, Indiana, has begun the construction of an addition to its plant. The new building is a one-story brick, concrete and steel structure, 60 x 270 feet. The company, which was incorporated in 1901, manufactures mechanical rubber goods.

SYNDICATE WOULD BUY PORT CLINTON FACTORY

A syndicate has been formed for the purpose of purchasing the factory and holdings of the Ohio State Rubber Company of Port Clinton, Ohio, consisting of thirty acres of land and a factory building containing over 300,000 square feet of space. The property has been in the hands of the U. S. District Court since the appointment of a receiver.

If the property is acquired by the syndicate as planned, a new company to be known as the Clinton Tire and Rubber Company will be formed, with an authorized capital stock of 1,000 shares of 7% cumulative preferred stock with a par value of $100, and 5,000 shares common stock without par value. A board of nine directors will manage the affairs of the company. At the beginning it is planned to make only tires for Ford cars.

Goodrich Branch at Duluth

The Duluth office of the B. F. Goodrich Company has been designated as a factory branch with G. C. Ryan, former salesman for the Northwest territory, as branch manager. The Duluth office has been functioning under the Minneapolis office but increased business in this section has made practicable the establishment of a direct branch, according to officials of the company.

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GOODYEAR STARTS WORK ON TIRE FABRIC MILL

Following ground-breaking ceremonies on July 27, construction was begun on the first two buildings to be built by the Goodyear Tire and Rubber Company as part of its $2,000,000 expansion of the Paragon Fabric Mills which it recently purchased at Cedartown, Georgia.

The buildings are to be two stories in height, the larger one being 500 feet long and 250 feet wide, and the other 200 feet by 150 feet. A large cotton warehouse will be erected on the site later. According to officials the plant will begin operation on December 1, with 35,000 looms, running 24 hours a day, and when completed will be one of the largest fabric manufacturing units in the country. It will be known as the Goodyear Clearwater Mill.

Work was begun at the same time on the construction of 100 houses of from three to five rooms each which will be used to house the 900 or more additional employees necessary to man the plant when it is opened on December 1. Following the exercises at the ground-breaking, a luncheon was given by the Goodyear officials at which the Mayor and prominent residents of Cedarwater were the guests of honor.

RIM OUTPUT SLIGHTLY BELOW THAT OF 1925

Figures just released by the Tire & Rim Association of America show that the production of automobile rims is continuing at a slightly lower level than last year. During July 2,123,368 rims were produced as compared to 2,262,671 in July, 1925. The total production of the first seven months of 1926 amounted to 15,318,945, and for the same period of 1925 was 15,796,344.

Balloon rim production reached the new high level of 84.4 per cent of all the rims produced, as against 72.4 per cent in July, 1925. The largest production was in the 28x3½ size of which 1,009,388, or 47.8 per cent, were made in July, while in the same month of last year only 36.2 per cent, or 819,685 were of this size. Balloon rim production for the seven months increased from 63.3 per cent of the total in 1925 to 77.5 per cent this year.

The percentage of clincher rims produced during July was only 5.2 per cent of the total as compared to 18 per cent in the corresponding period of last year. High pressure rims accounted for only 3.4 per cent of the total production last month as against 5 per cent in Juy, 1925.

Production in some of the leading sizes was as follows:

	June 1926	Per Cent	June 1925	Per Cent
30 x 3½ Clincher	95,810	4.5	390,682	17.3
26 x 3½ Balloon	76,383	3.6	—	—
28 x 3½ "	1,009,388	47.8	819,685	36.2
28 x 4 "	195,733	9.2	318,462	14.3
29 x 4 "	289,227	13.6	185,495	8.2
30 x 4½ "	131,282	6.2	176,862	7.8
30 x 5 "	27,051	1.3	34,716	1.5
31 x 5 "	23,765	1.1	28,794	1.3
32 x 4 High Pressure	16,369	0.8	22,909	1.0
32 x 4½ " "	33,224	1.5	31,207	1.4
30 x 5 Truck	115,304	5.4	79,736	3.5
32 x 6 "	11,343	0.5	6,539	0.3

Increased Use of Rubber in Stone Carving

An ingenious and increasing use is being made of rubber by Vermont stone companies who do a large business in preparing tombstones and other stone memorials. The accompanying illustration, which is presented through the courtesy of The Barre Electric Company of Barre, Vermont, shows the process.

The large stone in the background has been painted with a thick coating of a rubber compound which is kept warm in the electric glue pot. The desired lettering or sketch is laid out on the rubber coating and is then cut away with a small pointed knife to expose the stone beneath. The stone is next removed to a sand blast room where sand is blown against it by a high pressure of air. This cuts the stone where the rubber has been removed. Where the rubber has not been removed, the sand bounces off and leaves the stone unmarked. After the stone is cut to the desired depth, the remaining rubber is stripped off and the job is completed.

In nearly all the large granite plants in Barre, a supply of the rubber compound is kept heated to a certain point all day so that as soon as a monument is ready, it can be engraved. In former times a double boiler was used for this purpose but there was constant danger that the rubber solvent would catch fire. Recently a two-gallon electric glue pot with thermostat control has been put into common use and is making the system all the more popular.

Decision in Patent Suit

In a decision filed in the United States district court at Trenton, N. J., Federal Judge Joseph L. Bodine has awarded the Delaski and Thropp Circular Woven Tire Company of Trenton an injunction and an order for an accounting of profits against the Murray Rubber Company, also of Trenton, for infringement of a patented tire building machine. Judge Bodine's decision is the first ruling upholding the validity of the contested Thropp patent.

The Thropp company's patent is said to contain 148 claims, 15 of which are now in suit and the remainder pending. The final settlement is expected to be an important one since many other companies are understood to be using Thropp's inventions.

Toledo Rubber Company

The Maumee Valley Rubber Company has been recently incorporated to engage in the reclaiming of rubber and the manufacture and sale of rubber goods in Toledo, Ohio. The stated capital of the company is $75,000. The incorporators are S. F. Novak, John Greenwood, C. J. Neithammer, Arthur Pieffer, and Henry Hennaman.

Crown Rubber Company

The Crown Rubber Company which recently took over the plant of the Sprague Rubber Company at Omaha, Nebraska, will begin operations on September 1 with a capacity of 1,200 tires a day, according to George Tunnison, president of the company. He states that about 300 workers will be employed. The new firm is capitalized at $450,000.

Rubber Novelty Company

The Goodyear Rubber Ball and Novelty Corporation has been recently incorporated for the manufacture of rubber novelties at Paterson, N. J. The capital of the company comprises $250,000 worth of preferred stock and 15,000 shares of common stock, no par value. E. Shavick, B. T. Stafford and W. H. Young are the incorporators.

To Expand Chemical Output

Increased sales of compounding materials for the rubber industry, particularly of Grasselerator 808, have led the Grasselli Chemical Company to make a considerable expansion at its Cleveland works. The new facilities will be put into use about September 1.

MURRAY TRIAL AGAINST SEARS ROEBUCK DELAYED

An effort by the Murray Rubber Company of Trenton, N. J., to obtain an early trial of its suit against Sears, Roebuck and Company of Chicago has not proven successful. The suit was instituted in the United States district court at Trenton last April, the Murray Company alleging that Sears, Roebuck and Company had failed to live up to a contract under which Murray would have supplied it with tires and tubes for its mail order trade. For the alleged breach of contract, the Murray Company asked $5,000,000 with interest and also sought payment of $521,103 for goods said to have been already delivered.

In an order filed last week in the Federal court at Trenton, Judge Runyon requires Murray to furnish the defendant with all details of the alleged contract between the two companies. The necessary research and preparation of documents will delay the trial for some time whereas the Murray Company was seeking to have it speeded up.

Accident at Firestone

Three employees of the Firestone Tire & Rubber Company were scalded to death and two others were severely burned when a hot water pipe in the tire inspection department of the Akron plant burst on August 10th.

Fisk Branch To Move

The Des Moines branch of the Fisk Rubber Company will move to new quarters in October when a building now being constructed for it is expected to be completed. A five-year lease has been taken on it by the Fisk Company. The branch will be used as a distributing center for central Iowa for Fisk tires and for most of the state for Federal tires. Walter Wise is the district manager.

Converse on Part Time

Production has been resumed in the plant of the Converse Rubber Shoe Company at Malden, Massachusetts, following a shutdown of three weeks in the shoe department and ten days in the tire department. According to officials of the company, the shoe department will operate on the basis of five days a week until September 1, after which it is expected that another half-day will be added to the schedule.

Ferdinand von Hermann

Ferdinand von Hermann, department manager of the Cleveland mechanical goods factory of the United States Rubber Company, died at Cleveland on August 10th. He was 48 years of age. Mr. von Hermann had been connected with the United States Rubber Company for the last twenty-four years.

NATHAN CHOSEN AS NEW BRITISH RUBBER CHIEF

Sir Matthew Nathan has been appointed by the British Colonial Secretary to succeed the late Lord Stevenson as chairman of the rubber advisory committee of the Colonial Office. He assumes the position at once.

The new head of the rubber committee has had a most interesting career in the service of the British government and his promotion has been rapid. In 1880 he entered the Royal Engineers and saw active service in the Nile expedition and later in India. He was then appointed administrator of Sierra Leone and in 1900 he became governor of the Gold Coast.

From Africa Sir Matthew went to China as governor of Hongkong and thence he was transferred to Natal where he made another enviable record. He returned to England in 1909 and has since held a number of important posts in various government departments. His appointment as chairman of the rubber advisory committee has been welcomed by British rubber growers.

Carlisle Expanding

The Carlisle Tire and Rubber Company is planning to erect an addition to its plant at Carlisle, Pennsylvania, which will increase its production capacity from 6,000 to 12,000 inner tubes per day. Improved machinery will be installed employing the newest processes in the manufacture of inner tubes. The firm at present employs 200 men and anticipates doubling this number when the new addition is completed.

The company has enjoyed steady growth since its organization in 1909 by Charles S. Moomy, its president, and is said to do a gross business of $2,000,000 a year.

A Tribute to Dr. Weber

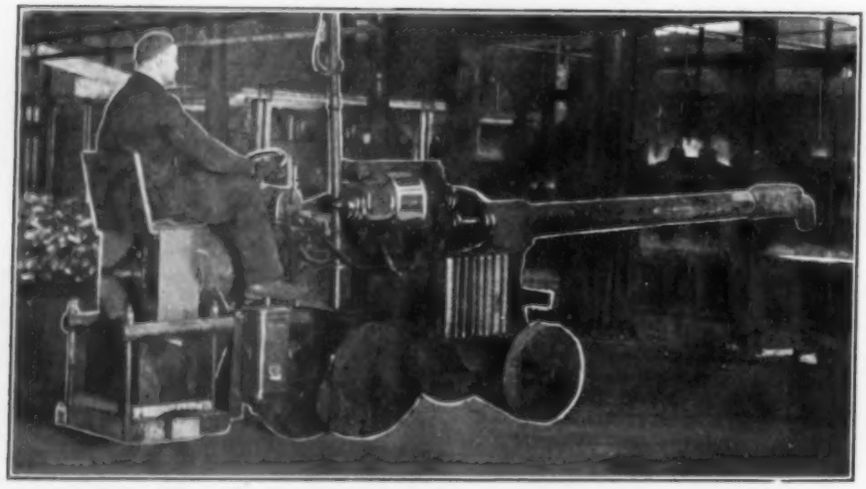
(Received too late for last issue)

The sudden passing of Dr. Lothar E. Weber came as a shock to a large circle of friends and acquaintances which he enjoyed both in and out of the rubber industry. Although my personal acquaintance with Dr. Weber was limited, he had impressed me with his pleasant personality and the readiness with which he adapted his style and form of address to suit the calibre and understanding of those with whom he talked and came into contact. Possessing that very valuable combination of characteristics, and an inquiring mind and a scientific training with which to direct its activities, Dr. Weber made an important place for himself in the chemical world, particularly in the field of rubber technology.

His published works are familiar to most rubber chemists, and his untimely decease is a severe loss, not only to his circle of friends, but to the industry as a whole.

R. P. DINSMORE

Furnace Charger in Steel Mill Equipped With Rubber Tires



A new market for solid rubber industrial truck tires has been opened up with the movement from flanged wheels and steel tracks to rubber tires and concrete pavements in the steel mills. In connection with the use of its equipment in the Atha Works of the Crucible Steel Company, The Electric Controller and Manufacturing Company of Cleveland has called attention in its house organ to the fact that a Brosius floor charger at the works is now operating on rubber tires and the company is finding the change from steel wheels and rails entirely satisfactory.

At the Atha Works, the rubber tired charger is serving six reheating furnaces and carrying the white hot billets to the rolling mill. It is operated entirely by one man. Another set of six furnaces, which is without a mechanical charger, requires six to eight laborers.

The freedom that the rubber tires and the concrete pavement give the charger is the real source of its capacity. There are many movements on this long nosed machine which swings around in every direction, stoops to pick up a cold billet, runs to an open door of the glowing furnaces, deposits its load and then backs away to reach into another furnace and select a white hot load for conveyance to the rolling mill.

EDITORIAL COMMENT

Export Sales of Rubber Goods

During the 12 months ended June 30 of this year, the United States exports of manufactured goods were 16 per cent greater on a value basis than in the preceding 12 months. The aggregate value of all our domestic exports, other than finished manufactures, decreased by 12½ per cent.

According to Dr. Julius Klein, Director of the Bureau of Foreign and Domestic Commerce, this decrease was not due to any change of an enduring character in our ability to market foodstuffs and raw materials abroad, but it did reflect an abnormally poor yield of wheat and rye and a marked decline in the price of cotton. The increase in the exports of manufactured goods so nearly counterbalanced the decrease in the unmanufactured class that the total exports of the country showed a decline of only 2½% for the fiscal year. But while the exports of foodstuffs and raw materials were receding and the exports of all manufactures were going ahead by only 16 per cent, the foreign shipments of rubber goods increased by approximately 35 per cent.

It must, of course, be granted that in comparison with the domestic business the exports sales of rubber goods were not large but they were by no means insignificant. According to the Rubber Association, the sales value of all rubber goods shipped during the year ending June 30, 1926, was approximately $1,200,000,000. The rubber goods exported during that year were valued at $89,600,000, or roughly 7½ per cent of the total. In the preceding year, according to the same source, the value of all shipments was $1,005,000,000. Exports were invoiced at $43,600,000 or less than 4½%.

There is no avoiding the fact that the exports of rubber goods made an exceptional showing last year when compared with other manufactures because the prices of rubber goods had advanced abnormally while those of other lines had not. However, if half of the 35 per cent gained by rubber goods exports be credited to higher prices, the rate at which the sales of such goods have increased is still as good as the average, which was 16%.

In comparing the exports of rubber goods with the total sales of rubber manufactures there need be no qualification as to higher prices since the price of goods sold domestically had increased in response to higher crude rubber costs just as the export price lists had been advanced. It is clearly apparent that foreign sales forged ahead to make an unsually large contribution to the industry's sales total, a contribution that is fully worth noticing and thinking about.

In the fiscal year 1921-1922 the exports of rubber goods from this country were valued at $30,000,000; as noted above, the value this last fiscal year was only a trifle short of $90,000,000 or an increase of 200 per cent in four years. Figures such as these seem to indicate that a fitting day has come for the rubber industry to quit shoving its export trade off in a corner as a troublesome and non-productive department.

As in the United States, the rubber goods in principal demand abroad are automobile tires and tubes. The increasing use of motor vehicles in foreign countries is too well-known to call for detailed comment here. It is that circumstance as well as increased sales efforts that has been responsible for the larger exports of American rubber goods. The foreign automotive registration will continue to grow and some day there will be a rubber goods market beyond the boundaries of the United States as attractive as the market within them is today. The rewards will then be for those companies which have established themselves in the past.

Philippine Uncertainty

While the Philippine legislature is considering a change in the land laws to permit the leasing of large acreages of rubber territory for a long term of years, Colonel Carmi Thompson, President Coolidge's special investigator who is now in the islands, is reported to have brought forth an idea that should be of equal interest to those who hope to see a really important rubber development there. Colonel Thompson is said to be convinced that large rubber plantation developments as well as economic development of all sorts will wait until the political future of the islands has been decided. Accordingly, since in his opinion the islands are clearly not yet ready for independence, he would have Congress put an end to the political uncertainty by definitely postponing the entire independence question. And when he says definitely, he means for a definite period—twenty-five, thirty or forty years.

There has been so much said and written about the Philippine land laws since the Department of Commerce gave them prominence in its crude rubber report that many people have forgotten that a rubber development in the islands would have any remaining barrier if the laws were liberalized. However, the Philippines are no different from any other proposed rubber plantation site in having to face the availability test on three main points—agricultural, economic and political.

The success of the small rubber plantations already established appears to answer the question about agricultural suitability. It certainly does when it is considered along with the reports of all the experts who have investigated the southern islands. To some extent the same factor answers the economic question. While the labor supply is neither as great or as cheap as in Malaya and the Dutch East Indies, a fairly large development would be possible with the labor now available at a wage not too greatly in excess over other producing countries. The political question, however, has remained along with that of the land laws as a real obstacle to large investment of American capital in an industry whose returns are spread over a long period.

The economic life of a rubber tree is judged to be about thirty years. If it were definitely known that the political status of the Philippine islands would not be changed during such a term of years, the possibility of their being the scene of any substantial rubber development would be infinitely increased. From a rubber standpoint, Carmi Thompson's proposal is fully as important as the Rubber Land Act now before the Philippine legislature.

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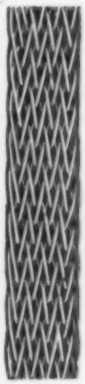

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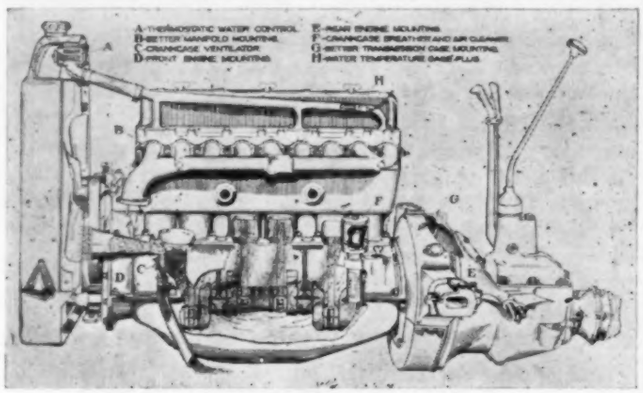
Cars Adopt Rubber Cushioning

Automobile Manufacturers Featuring New Uses of Rubber in 1927 Models; Rubber Engine Mountings and Spring Shackles

ANNOUNCEMENTS OF new models by automobile manufacturers during the last month have been accompanied in many cases by references to additional uses of rubber for cushioning purposes. The terms "cushioned in rubber" and "rubber silenced" are being given a prominent place in the new automobile advertising. The pneumatic tire is, of course, the supreme cushion for the motor car, and in fact, without it the present day automobile would not be possible. The new uses of rubber by the car manufacturers carry it beyond the wheels into the chassis. The chief uses are at the spring ends and in the engine mountings.

The Buick Motor Car Company is emphasizing the use of rubber in mounting the engines in its new models. The three-point suspension is still used and at each mounting the engine is insulated from the frame by



Buick Engine Showing Rubber Mountings at Points D and E.

means of rubber parts. At the front point of suspension a rubber and fabric lining is used for the joint. At the two points in the rear, solid rubber sections are used as shown in the accompanying diagram and sketch. At these points the joints are of such a size that the rubber is under compression when they are tightened. The compression is an important factor in the reduction of vibration.

The insulation of the Buick engine from road shocks is an important point in the Buick claim that the new car is "vibrationless beyond belief". It is also an important point in the life of the engine which is protected from the racking of passing over bad roads. The added steadiness of the engine of course means more comfortable riding for the pasengers. As the photograph on this page indicates, the rubber mountings are almost completely encased in metal and hence their life is not shortened by exposure to air and water.

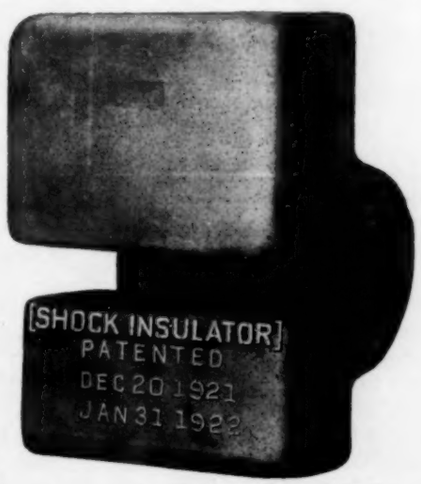
Other motor car manufacturers, notably Kissel, claim for their engines cushioning similar to that which Buick is featuring. Some suggest that they have taken advantage of such use of rubber in previous seasons, but if they did so in the same way as Buick and Kissel, they apparently failed to grasp the appeal it might have to prospective owners who seek the greatest possible protection from road shocks, both for themselves and the mechanism of their cars.

The second chief use of rubber in motor cars outside

Buick Rubber Mountings for front (left) and rear (right).

of the tires appears to be at the spring ends. The use of rubber spring shackles is of course not new but it is given a new emphasis in the 1927 passenger car models. The Mack motor truck was using rubber shock insulators regularly more than three years ago. The exact type of insulator used by Mack was in fact patented in 1921, and has been manufactured by the United States Rubber Company. Rubber shock insulators have been standard equipment on Yellow taxicabs for some time and have given extremely long mileage.

The type of rubber spring shackle used on the passenger cars which have adopted it is naturally smaller and simpler than the one which has been used on trucks. In most cases a simple bushing of specially compounded rubber has been used. In connection with their use on the new Kissel cars, a recent advertisement of the company states: "Resilient cushions of rubber are interposed between connecting points so that motor, springs and other important units are actually sunk in rubber. These live cushions will stand the roughest service for 100,000 miles and more. They do away entirely with shackles, spring bolts and working joints, eliminating oiling of these and other places that formerly had a tendency to develop rattles and squeaks. Being cushioned-in-rubber, these new Kissels give a more delightful qua-

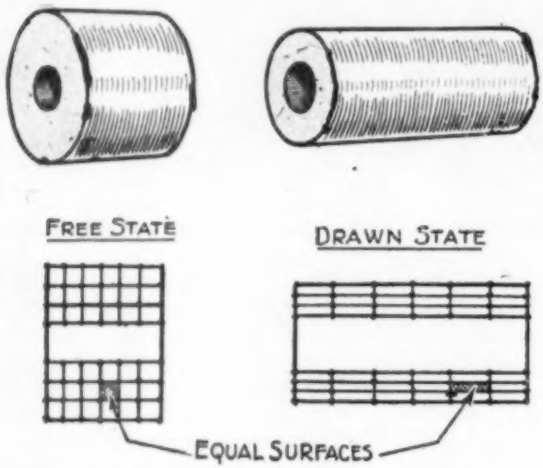


Rubber Shock Insulators Used on Mack Trucks

lity of riding comfort than you have ever before experienced. Ripples and bumps in the road are noiselessly absorbed. Vibration is further minimized. Perfor-

mance of rare quietness and buoyant smoothness is the net result.

Passengers riding in motor vehicles equipped with pneumatic tires and rubber shock insulators are in reality riding on rubber twice. There is an additional quietness, resiliency and a reduction of vibration that is plainly noticeable. The impacts from shocks are lessened inasmuch as the blows are not transmitted direct through



Details of "Silentbloc" Bushings of Compressed Rubber.

solid metal parts to frame and body, but must pass through the yielding element of rubber which intervenes.

In addition to the cushioning effect, rubber at the spring ends eliminates the need for lubrication at such places. The upkeep is accordingly less as there are no grease cups to look after, and there is no oil, no dirt and no cleaning. Furthermore, there is no friction between the surfaces and consequently there is no wear, looseness or rattle.

It is essential that solid rubber bushings, either for spring ends or for engine mountings, or elsewhere, be applied under compression. Rubber under compression or in tension is unique in its ability to absorb vibrations. This ability, roughly speaking, is inversely proportional to the extent to which the rubber is stressed. For example, a golf ball in which the rubber threads are tightly wound is livelier than one in which the threads are lightly wound. In accordance with this principle, rubber spring shackles or insulators are always assembled under compression.

A special application of the principle of compression in connection with rubber bushings has recently been mentioned in *The Motor*, published in London. A new cushioning material, which is really rubber under compression, has been introduced on the French market under the name of Silentbloc. It is used as a cushion between metal parts which have a limited play of action, such as spring ends. In such a place it is not satisfactory to use bushings of plain rubber since if the rubber is soft enough to permit the desired movement, it will also deform to a prohibitive extent under load. On the other hand, a rubber compounded sufficiently hard to withstand the load will not allow the desired movement. "In Silentbloc," states *The Motor*, "these difficulties have been overcome in an ingenious way so that deformation in one direction is prevented while flexibility in the desired direction is maintained and even increased."

It is said that upon casual inspection a bearing constructed by this new method might be mistaken for a plain rubber bush. However, in achieving Silentbloc the rubber bush is made with a larger external diameter and a smaller internal diameter than are finally required, the length likewise being considerably less than will eventually be the case. This bushing is then forced into position in a metal shell by a secret process with the result that its outside diameter decreases and inside diameter increases while its length also increases. The change in the bushing and the principle is illustrated by the diagram in the adjacent column.

The results of this compression as practised in Silentbloc are two-fold: In the first place the fact that the rubber is initially compressed enables it to carry very great radial loads with but an inappreciable deformation. Secondly, if the outer shell containing the bush be fixed, the bolt or shaft which passes through the bush can be turned either way to an extent of about 45 degrees without any slip occurring at the inner and outer rubber surfaces. In other words, the whole of the movement is silently and unobtrusively taken up in the rubber itself. The crux of the matter is that compression of rubber greatly increases its load carrying capacity without reducing its flexibility under the oscillatory movement. The internal heating has been found to be negligible.

While the application of rubber spring shackles to American automobiles has been in a simpler manner than has been outlined for the new French material, the rubber used is under compression and is expected to serve the purpose sufficiently well.

In the United States rubber is being used in still another way to protect motor vehicles from road shocks. In this instance, it is employed in connection with the springs to replace any of the commonly used shock absorbers. The new device is known as the Lewis Rubber Shock Eraser and is made by the Columbia Tire Corporation at Portland, Oregon.

The Lewis Shock Eraser is simply a specially compounded rubber strap and nothing more. By means of a

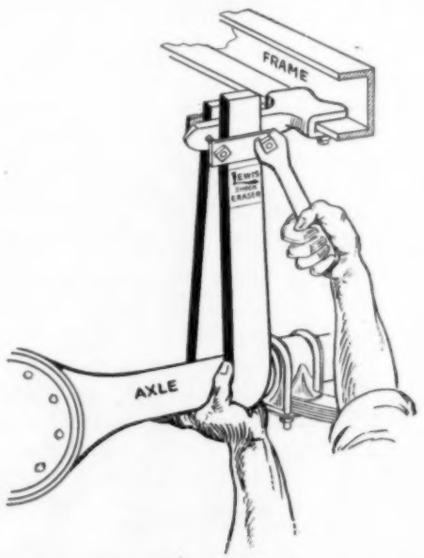


Illustration Shows Method of Application of Lewis Shock Eraser to Rear Axle.

special clamp, one end of the strap is attached to the frame of the car, the strap is brought down and around the rear axle and up again to be secured by the same clamp. As this is done the springs are under slight compression so that the shock eraser will be under some ten-

[*Continued on Page* 456]

The London Letter

The GENTLEMAN FROM MINCING LANE will report current opinion in London's famous rubber market in every issue of THE RUBBER AGE

This Week the Gentleman Says "Let's Forget Crude Rubber".

LONDON, August 13, 1926.

NOW THAT the August 1st excitement in the Lane about the quarter's average price has passed, and the August bank holiday has started everyone on the way to the seashore for the summer holiday, all is quiet on Thamesside. London rubber folks are not worrying whether American car owners will buy 5 million spare tires this fall to replace those used during the first half year; rather they are testing out their own "spares" for holiday runs, and their wives have just bought a new rubber bathing cap or two.

Speaking of "spares," I have heard quite a little gossip that some of the balloon tires bought here last winter are not proving up very well, that they are splitting after 4,000 to 5,000 miles and thus falling far short of the 15,000 miles expected of them. I don't know how general this complaint is but still it is of interest.

I have noticed that when the pens of the American correspondents in London run dry of events, they frequently dip into that inexhaustible well of interest, personalities. Just now, two of the three leading personalities in the British rubber world are directors of the Dunlop Rubber Co. Sir George Beharrell, Dunlop's managing Director, has just been elected Chairman of the India Rubber Manufacturers' Association, and the Rt. Hon. Lord Colwyn, P. C., will be made the President of the Institution of the Rubber Industry next month. The third gentleman of prominence is Lt. Col. Rt. Hon. Sir Matthew Nathan, P. C., who has just been appointed by the Colonial Office to the chairmanship of the Rubber Advisory Committee of the Colonial Office, to succeed the late Lord Stevenson. Sir Matthew is a colonial administrator of many years standing, having been successively governor of the Gold Coast, Hong Kong, Natal and Queensland. So far as can be seen he has had very little contact with the subject of rubber, but for that matter this was also true of Lord Stevenson, whose principal business had been the distilling of Johnny Walker Whisky, but who had also been very successful as chairman of numerous governmental committees. Both of these gentlemen are types of highly specialised experienced governmental administrators and committeemen to be found in Whitehall much more frequently than on Pennsylvania Avenue, due to the extensive overseas interests of the British Commonwealth.

COMING BACK to the Dunlop Directors to whom I have referred, it is quite logical that the directors of the company should be respectively head of the India Rubber Manufacturers' Association and of the Institution of the Rubber Industry as the Dunlop Company has repaired its fences and come to the fore with remarkable rapidity since the depression of 1921. Today they are making everything that can be made of, or with, rubber, including cables. It is this last product that brought Lord Colwyn to the Board of Directors, as he was the responsible head of the McIntosh Cables. Lord Colwyn is a man of very extensive interests, primarily in Lancashire, being Chairman of one of the big local banks which has continued independently outside of the four big banks of the country, and he is also interested in cotton, collieries and railways. He has also been chairman of any number of governmental committees, for examples, the Bank Amalgamation Committee, the Flax Control Committee, and the Admiralty Committee on Dockyards.

Lord Colwyn's acceptance of the presidency of the Institution of the Rubber Industry is a definite mark of the recognition that that organization has now taken its place among the first rank of industrial organizations in the country. Five years ago it was an institution in debt, and of comparatively no importance; today it is beginning to take the shape of the "Rubber Parliament", which was the dream of one of its founders, Mr. D. F. L. Zorn, ex-chairman of the Rubber Shareholders Association, who elaborated this idea of a Rubber Parliament in a speech in 1923. The Institution of the Rubber Industry has a membership of over 1,600, taken from all branches of the rubber industry; growing, manufacturing, commercial, technical, etc. Also it is interesting to find that there are 50 American members of this institution. While American rubber men may not get much return for their membership in this organization in the way of personal contact with British rubber men in various meetings and social activities, membership does give them the published "Transactions" of the society, which are published bi-monthly and open up channels of contact with British rubber men and affairs not otherwise available.

THE INSTITUTION has various sections, geographic and by subject. There are branches in Birmingham and Manchester, as well as London. The London headquarters has sections on advertising, sales, and one looking after shareholders interests. Also the Institution is aiming to expand educational work to develop expert personnel for all branches of the industry. A diploma has been established which is awarded to applicants who can successfully pass examination for associateship, A. I. R. I. (Sc.) or A. I. R. I. (Eng.) or A. I. R. I. (Tech.). Fellowship, (F. I. R. I.) status does not depend upon any examination. So far only 50 Fellows have been elected and 45 Associates.

The diploma of the Institution is described as "a real hall-mark of efficiency, established on a solid basis, not a 'catch-your-subscription' diploma, but a real one, ad-

ministered by the best brains in the industry for the industry.'' No American member has as yet received the diploma, but I understand that one has applied for it and that his application will be considered at the next meeting of the Institution.

Praise of this organization is to be heard on every side in rubber circles in London. In spite of different opinions on such fundamental subjects as the Stevenson scheme, the Institution has proved to be valuable in putting men in the different branches in the industry in close touch with one another. America has no general rubber institution, I believe I am correct in saying. Would not such a body be of use, particularly as merchandising, scientific and other interests are becoming more important alongside of the huge manufacturing interest?

S. Figgis & Co., London, have just issued their half-yearly review in which they estimate this year's world production of plantation rubber at not more than 561,000 tons. This is based on their estimate that 271,000 tons represents the total shipments for the first six months, and anticipating an increase of 20,000 tons in the second half-year. This figure of 561,000 tons is raised to 601,000 by adding wild rubber.

At the beginning of the year, estimates of 1926 production ran as high as 675,000 tons so that the new estimate is a startling revision of the views at that time. It was then thought that Malaya and Ceylon might reach their standard productions and that the Dutch East Indies output would increase to 220,000 tons of dry rubber. In addition, India, Burmah, British North Borneo, French Indo-China, Siam and Sarawak were counted upon for a total of 35,000 tons.

As is well known these things have not materialized, both Malaya and Ceylon having fallen far short of exporting their full standard production and the Dutch East Indies output having changed only slightly. It is remembered that American estimates both of production and consumption were lower than most British estimates. It now appears that the British expectations were too high and S. Figgis' revised estimate is only the first of many than may be expected.

Yours Faithfully,
THE GENTLEMAN FROM MINCING LANE.

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Breather Bags for Saving Oil

Balloon Device Made by Rubber Company Has Proven Most Effective and Cheapest Method to Stop Huge Oil Losses

AN INTERESTING chapter has been added to the history of the rubber industry with the action of the Goodyear Tire and Rubber Company in going to the assistance of the oil industry in preventing oil evaporation losses. Up until the present time no rubber has been used in the equipment that Goodyear has furnished but THE RUBBER AGE is informed that the use of rubber as a protective coating is expected to develop.

Each year the oil industry loses through evaporation between six and seven per cent of all the oil produced. Naturally it is the very finest and lightest of the gasoline content that is lost. It is a conservative estimate that $200,000,000 worth of gasoline a year is dissipated into the atmosphere. It was to the prevention of such losses that much attention has been given which has resulted in the development of the Goodyear Breather Bag.

The principle of the breather bag is as simple as the conditions surrounding the oil loss. As the temperature in a huge oil tank rises during the day, several thousand cubic feet of air saturated with valuable gasoline vapors are poured forth into the atmosphere. As the temperature falls at evening and during the night, fresh outside air is sucked in to become charged with gas and expelled next day when the temperature rises again. This alternate action through which millions of gallons of the very highest quality of gasoline are lost is known as breathing. It is absolutely necessary to have air vents on the tanks since without them, the tanks would be wrecked.

The breather bag idea which was originally devised by the engineers of the Standard Oil Company and further developed by Goodyear, now provides the most complete recovery of these evaporation losses and at a fraction of the cost of any other really effective system. Other systems which have been tried and found to be more expensive and less satisfactory involve reducing the pitch of the tank roofs, painting with aluminum or white paints to reflect the sun's rays, water spraying of roofs, cork or hair felt insulation and sunshade or false roofs. Each of these means has contributed some relief but because they are expensive and leave much to be desired the breather bag was devised.

Breather bags in use in connection with Standard Oil tanks at Whiting, Indiana.

The breather bag is a balloon which differs from the aerial balloon principally in the solution or "dope" with which its fabric is treated. This special, patented gelatine glycerine mixture impregnating the closely woven cotton fabric makes it absolutely impervious to gasoline or gasoline vapors. The bags now being installed are of cylindrical shape with hemispherical ends and are 25 feet in diameter, 45 feet in length and of 18,000 cubic feet capacity.

The protective housing recommended for the bag is a simple, gable type, frame structure with weather-proof roof and sides of corrugated iron for the bag itself is not waterproof. To make weather tightness of the house less essential it is probable that rubber proofing of the outside of the balloon will be resorted to, as mentioned in the introductory paragraph.

It has been found that an ordinary 120 x 40 foot tank full of gasoline (3,250,000 gallons) unprotected, will lose by breathing about 250 gallons on an average spring or fall day. The saving of this loss is practically complete when the breather bag is properly proportioned to the vapor space. A single 18,000 cubic foot bag will serve two of the big tanks under average conditions. For low pitch roof tanks one balloon can be made to serve four tanks.

The breather bag in its protective housing is set between the tanks to be served, as shown in the accompanying diagram, and is connected to them by means of pipes running from the air vents at the top of the tanks. When the gasoline in the tanks increases in volume in keeping with the higher temperatures of the daytime, the expelled vapor goes into the bag instead of into the atmosphere. When the temperature falls and the volume of gasoline in the tank grows smaller, the tank breathes

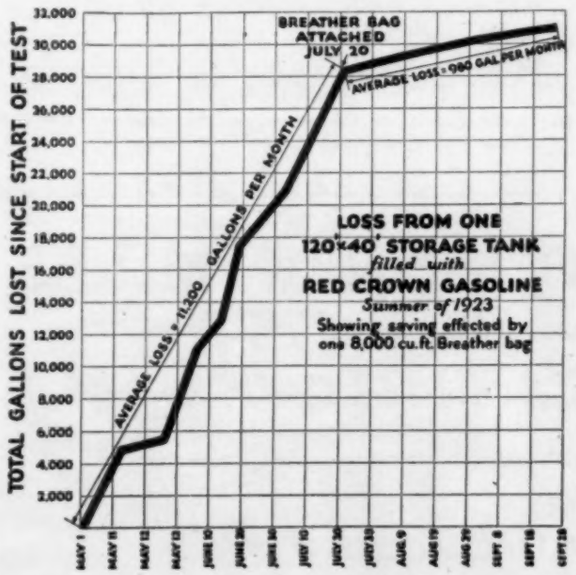
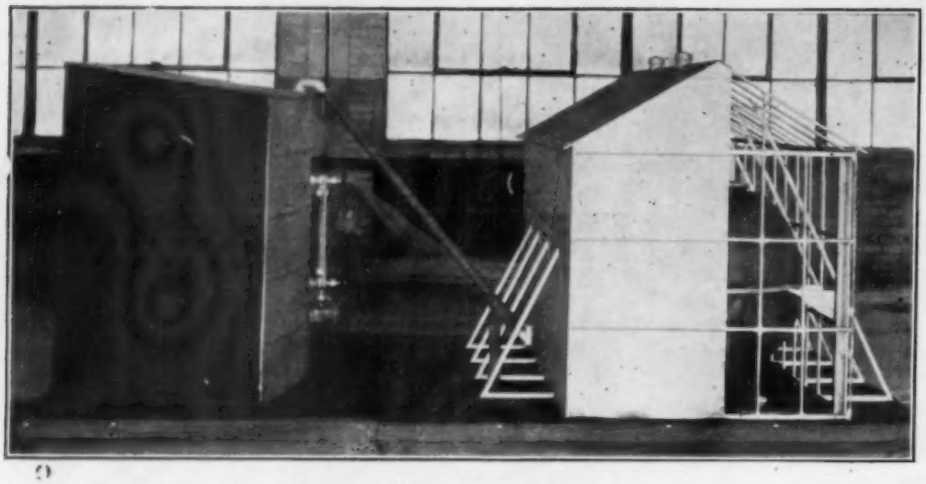


Chart 1—In this case the saving effected by one small breather bag amounted to 10,220 gallons per month.



Working Model of the Breather Bag. Part of the protective housing at the right is cut away to show a bag partly inflated by the gasoline vapor which has passed into it from the storage tank at the left. The bag is attached around its middle to the frame of the protective housing and as it is deflated, the upper part sinks into the lower half.

back in not fresh outside air but the gas-laden air from within the bag. Any gasoline that may have condensed within the bag is drained out; that still in vapor form is sucked back into the tank. The breather bag also prevents loss of vapor occurring when tanks are being filled with gasoline.

The first use of breather bags was in connection with storage tanks at Whiting, Indiana. During the summer of 1923 and 1924 the bags were used at that place in connection with eleven storage tanks. Part of the installation is shown in the photograph on page 453. A very careful check was kept of the loss both before and after the bags were attached to the tanks. The saving effected by one small bag is shown in chart.

On a percentage basis, the saving in connection with tanks which had been sprayed to keep the temperature down was as follows: Before the bags were installed, the loss was 43 hundreths of one per cent per month; after the installation, the loss was reduced at once to 22 hundredths of one per cent. In other installations the loss was reduced to as low as 3 hundredths of one per cent, and it was finally shown that breather bags can reduce the average loss to 4 hundredths of one per cent per month throughout the season. Much of the latter loss is believed to be due to leakage at seams in the tank.

The cost of the 18,000 cubic foot tanks on which the Goodyear Company has standardized is less than $2,000. The cost of the housing, piping and all other necessary equipment varies from $3,000 to $4,000, depending upon conditions and material costs. On the average, however, the complete installation should cost around $5,000 per bag, or $2,500 for protecting each of the two tanks that should be connected to it. This cost is said to be less than cork or hair insulated roof or other devices to conserve the vaporized gasoline.

At the rate of savings outlined in a foregoing paragraph, a breather bag installation would pay for itself in forty-five days. Assuming that it was only 75% as efficient as was stated, it would pay for itself in sixty days. The life of the bag itself is said to be at least

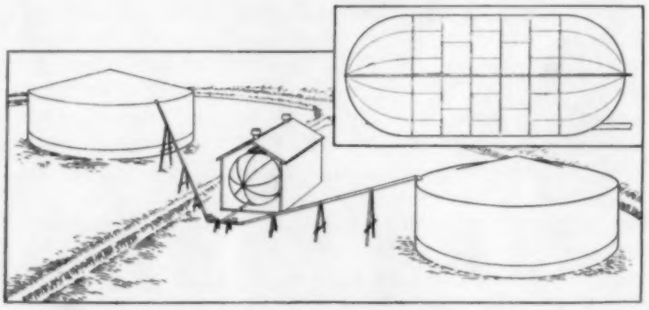


Diagram showing breather bag serving two tanks with high pitch roofs. Inset shows sectional structure of bag.

four years while the housing and other equipment would last much longer.

The original interest of the Goodyear Company in the breather bag idea arises from the fact that the company has been engaged in the manufacture of balloons and airships for twelve years and maintains a department of skilled fabric workers. During the World War, many military balloons were built at the Akron factory and the company's aeronautical activities have since been broadened. The development of breather bags is one of the most recent but is expected to grow into an important part of the business.

NEW ENGLAND SOUTHERN MILLS

MANUFACTURERS OF TIRE FABRICS

This group of Mills is thoroughly equipped to produce coarse builders, breakers and chafers in all grades of cotton, in yarn numbers ranging from 4's to 30's in order to meet the demand for coarser yarns and lower cost fabrics.

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89 Franklin St., Boston **24 Thomas St., New York**

Rubber Goods for the Resort Trade

Nation's Playgrounds Offer Large and Profitable Market for Rubber Articles of Many Different Kinds

By Felix J. Koch

Bumpers of Rubber Absorb the Shocks of the Rocking Ark

I WAS SOMEWHAT surprised to have a successful manufacturer of rubber goods tell me that if he were to start anew in rubber manufacturing, he would know nothing better than to become internationally known as a producer of rubber equipment for summer and winter resorts.

"The chances are that even most old and seasoned rubber manufacturers have only the slightest notion of the endless variety, the enormous quantities and finally the attractive profits concerned in such trade", he told me. "Some day when you are at a resort, even a small one, investigate a bit for yourself and then multiply the possibilities for sales by the number of such resorts. The total will be found to be more important than has been commonly recognized."

At Coney Island, on the Ohio River some twenty miles from Cincinnati, I remembered to follow the manufacturer's suggestion.

"To start with", said the attendant at the bath-house sales counter, to whom I had put my first question, "there are rubber bathing slippers. We make a neat profit and we know that in turn the rubber manufacturer makes a neat profit on the quantity that we retail at one dollar per pair. There isn't a day the whole season through that our one resort here doesn't sell at least a dozen pairs. And, of course, we have just one of the thousands of resorts in the country".

"Along with the slippers", the attendant continued, "we sell dozens of bathing caps. A variety of styles and grades is required. The best seller is the slippery, almost leather-like cap of heavy rubber which is equipped with a strap and button and retails for one dollar. On a busy day at the beach we may sell as many as one hundred caps".

"We sell rubber combs of a size that retails at twenty-five cents at the rate of a half-dozen a day. Then we sell a red rubber set of ear stopples for fifty cents and there is a steady demand for them at that price".

"There is an almost incredible demand for rubber toss balls. White and red-and-white are the preferred colors. Sizes to retail at ten, twenty-five and fifty cents are needed. The twenty-five cent ball is the best seller and two to three dozen are sold every day during the season. There is a demand also for the harder type, the almost solid rubber ball that men like for beach games. The sizes should range from that of a cocoanut down".

Going on through the bath-house sales stock, I found rubber belts for which there was said to be a steady sale. Recently the bright colored rubber bandannas, with an edging of black, have been found to move well.

Over at the circular track where boys and girls keep a fleet of small automobiles busy throughout the season, a great many sets of tires are worn out. A special small tire which is always run soft is desired. The tires sell to the car men at around four dollars a set and last only one season.

The "trouble houses" of former days are now being built in many places in the form of an ark balanced on top of a steep Mt. Ararat. The animals are confined within by means of bars at the windows but bars of rubber rather than of metal have been found to serve the purpose the best and are generally used.

Inside the ark, the visitor makes his way into a cage, the door to which snaps shut behind him. The escape is easy when it is found that one of the bars to the cage is made of rubber. A section of strong one-inch garden hose is used for the purpose.

The teetering of the ark on the mountain top is eased by rubber bumpers. There are two of these, ten inches

Rubber is Used on Tires of Toy Cars, for Bars to Restrain "Boscoe" and for Bathing Accessories.

long by four inches thick and they are made of the best grade of rubber.

The "Dodgems" are the strong, electrically-propelled cars with bodies shaped somewhat like a Roman chariot. A trolley pole rises from each car to an electrically-charged wire mesh netting overhead. Jars from the collisions of the cars must be minimized and to that end each car is surrounded by a big rubber bumper which is not unlike a cushion tire. A fair-sized concession will have eighteen cars. The bumpers last for an average of two seasons. The owners pay about ten to twelve dollars each for the heavy rubber stamps. The metal trolley poles of the car are encased in rubber, garden or water hose being commonly used.

Many concessions where prizes are awarded for skill in rolling balls into slots or through rings use many gross of rubber balls during a season. Sponge rubber balls of about two and one-half inches in diameter are the most suitable. Thefts are so common that continual replacements are necessary.

The pony track still has a "run-about" or two for the older folk who like to ride but have forsaken the saddle. Thirty-two inch rubber tires for the front wheels and thirty-four inch for the rear wheels are absolutely essential. A concern at Akron still has the molds for such tires and so commands nearly all the trade. A set of the tires costs the trackmen forty dollars, f.o.b. Akron.

At Skateland they use seven hundred pairs of skates with frequent replacements. Those having rollers with hard rubber exteriors are much preferred. Other skates have a rubber cushion on the carrier pin on which the wheels rest. This cushion must be changed about once during a season.

The rubber toy balloons used at a resort in a season runs of course into thousands of dozens. At one popular type of concession balloons are inflated as patrons turn gaily painted wheels. The first to burst wins a prize but all of them suffer a similar fate before the players stop. The resulting consumption of balloons throughout a season is enormous. In addition, balloons are sold in large quantities to children and merry-makers and are widely used for decorating concessions of all sorts.

These uses of rubber at a single resort were found without special effort and there are certainly more to be listed. Preparing things of rubber to the precise ends suggested and then letting concessionaires know where their special requirements will be given special attention should yield a rubber manufacturer a substantial and profitable business.

Cars Adopt Rubber Cushioning

[*Continued from Page* 450]

sion at all times. The normal tension is determined in each case by the resiliency of the springs on the car.

The application of the Lewis Rubber Shock Eraser to a rear axle is shown in the diagram on page 450. For front axles a single strap is used, one end being made fast to the frame and one to the axle. The installation is said to be simple, and to require only a few minutes.

The chief advantage of the rubber shock eraser over mechanical shock absorbers is said by the Columbia Tire Corporation to be in its instantaneous and positive action. Quick, successive shocks, the manufacturer states, are absorbed completely in a way that is impossible for mechanical devices that must change the position of their working parts. Among the other advantages claimed is that following a simple installation, no oiling or attention of any sort is required. It is also claimed that the rubber straps will stand a tensile pull of 35 or more pounds per square inch, and that they will last during the life of the car since they are treated to resist oil or brittleness resulting from weather changes.

Distribution for the Lewis Shock Eraser is just being arranged, an experimental period of three years being satisfactorily ended. So far as is known, no car manufacturer has yet arranged to use it as original equipment.

The new Oakland has taken advantage of rubber in a way differing from any of those already discussed, and is advertising a "rubber-silenced chassis" as a result. This use of rubber is designed to eliminate noise and vibration from the engine and from the chassis. A rubber impregnated joint attaching the front universal joint of the drive shaft to the rear of the transmission eliminates transmission noises. The forward end of the shaft is cushioned also to produce an absolutely noiseless drive. Other cars, such as the Chrysler , have made use of the same principle during the last two years.

Not all ofthe motor car manufacturers have embraced these new uses of rubber to make their cars easier riding, and to reduce the vibration and noise. The new Packard and others of its class are claiming no special uses of rubber. However, there is a distinct trend toward a greater use of rubber in motor car construction for purposes of luxury and economy and it is a movement which will be interesting to watch.

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Organic Dyes for Rubber Goods

Fastest Colors Have Been Obtained By Introducing Dyes Into The Rubber Mix on Clay Bases and Curing in Press

By T. J. Drakeley, Ph.D.[1]

Department of Chemistry and Rubber Technology, Northern Polytechnic, London

ORGANIC DYES are rapidly being introduced for the purpose of coloring rubber and this paper deals with the various points involved in their use. One of the most important classes of dyes which are used in the rubber industry is the azo-dyestuffs. The azo dyes are prepared by the coupling together of organic compounds, many of which are powerful accelerators of vulcanization and it seemed desirable to determine whether typical dyes of this class would influence the process of vulcanization.

Drakeley, Zeitlin and Williams (*J. Soc. Chem. Ind.*, 1924, 43, 238T) have studied the effect of introducing the dye obtained by coupling diazotised 2-napthylamine-1-sulphonic acid with β-napthol in the various rubber mixes given in Table 1.

TABLE 1
DETAILS OF THE VARIOUS RUBBER MIXES

	A1	A2	A3	B1	B2	B3	C1	C2	C3
Rubber	90	87.75	85.5	90	87.75	85.5	140	140	140
Sulphur	10	9.75	9.5	10	9.75	9.5	15	15	15
Zinc Oxide		—		2.5	2.5	2.5	20	20	20
Barytes		—			—		30	30	30
Whiting		—			—		30	30	30
Dye	0	2.5	5.0	0	2.5	5.0	0	5	10

The samples were vulcanized in a steam-heated "day-light" press at a pressure of 50 lb. to the sq. in. (147°C). Twenty-four hours were allowed to elapse between the mixing operation and the vulcanization. The latter was conducted in ring molds which were introduced into a heated press with hot plates so that no rise was given. Five days after vulcanization ring test pieces were cut, and tested on the Schopper machine. From the stress-strain curves the following values for the extension were determined. (Table 2.)

TABLE 2
EXTENSION PER CENT AT A LOAD OF 600 G. PER SQ. MM.

Cure	A1	A2	A3	B1	B2	B3	C1	C2	C3
60 min.	1205	1145	1090	970	930	890	940	924	924
90 ..	1060	1025	990	860	840	820	850	835	820
120 ..	940	925	905	795	770	760	805	790	775
135 ..	904	890	875	770	750	735	—	—	—
150 ..	874	865	853	—	—	—	760	750	740

The results for A1, A2 and A3 are given in Figure 1 which shows that the extension for a fixed load decreased from A1 to A3. Determinations of the vulcanization coefficients showed that acceleration had taken place as opposed to a mere reinforcement due to the dye. Thus the coefficients for the 120 minutes' cure were: A1, 3.52; A2, 3.73; A3, 3.89.

If the results for B1, B2 and B3 are plotted, a similar set of curves are obtained which showed that zinc oxide had no markedly activating action on the accelerating properties of the dye.

The mixes C1, C2 and C3 are more heavily filled, and on plotting the results it will be observed that the accelerating influences of the dye has been reduced by the presence of the fillers, but is still observable. The decrease is probably due to the absorption of the dye by the fillers or to the enclosing of the dye by particles of fillers.

Separate tests were made to determine the effect of the dye on an accelerated cure. Diphenylguanidine was used as the accelerator and it was found that the corresponding curves were co-incident, thus indicating that the relatively powerfully accelerating influence of the diphenylguanidine had masked the smaller effect of the dye.

It may be noted that the color bases of basic dyes, in common with most basic materials, possess accelerating properties and patents have been taken out. But, with very few exceptions, the principal azo dyes are not basic. It seemed, however, desirable to determine the influence of a basic dye itself in the rubber mix. Drakeley and Coulson have investigated the influence of Bismark Brown in vulcanization. Full details of the experiments will be published later, but the results indicate that Bismark Brown has a definite accelerating effect on vulcanization of a pure stock, and that zinc oxide has no marked activating action on the dyestuff.

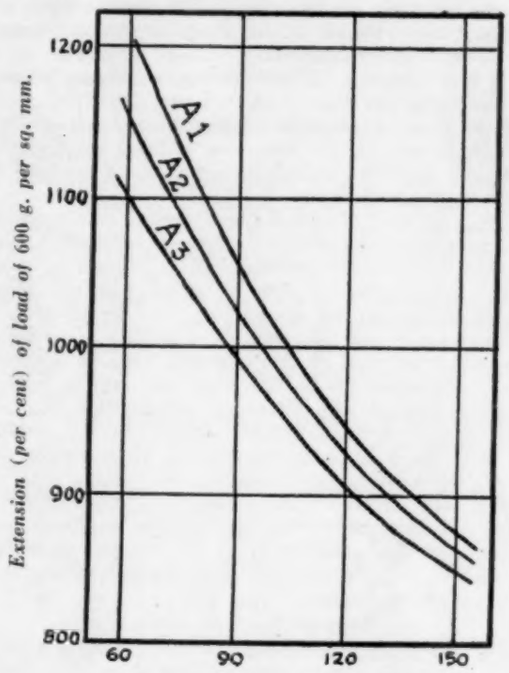

FIGURE I

Method of Introducing the Dye into the Mix

(a) Direct.—It is possible to mix the dyes direct into the rubber and in certain cases (Vulcafor Red, Vulcafor Green), where the dye is a stable compound which is insoluble in water but is easily mixed with the rubber, a satisfactory result is obtained.

In other cases, two difficulties may arise: first, the dye may be sufficiently stable to withstand the vulcanizing temperature but not fixed in the final product, that is, the color may be washed from the surface of the vulcanizate; secondly, the temperature of vulcanization may destroy the dyestuff. The first case is typified by Quinoline Yellow Base, Acid Orange G, Disulphide Blue V, etc., which give vulcanized products in which the dye is not fast to water. The second case is peculiar and such dyes as Chlorazol Orange, Tartrazine, Acid Green, Light Green SF, Disulphide Blue A, Turquoise Blue G, Soluble Blue 3 M give a vulcanized product which is almost devoid of color.

(b) Solution.—Where dyes were soluble in water, alcohol or chloroform, solutions were mixed on the rolls with the rubber. Difficulties arose in evaporating the solvent, and as the fourth method gave better results the introduction of the dyestuff in the form of a solution was abandoned.

(c) In Paste Form.—Dyes, which were insoluble, were incorporated in the form of pastes with water, but the same objection exists with regard to the evaporation of the liquids.

[1]Paper read before Edinburgh meeting of the Institution of the Rubber Industry.

(d) On Fillers.—As the above methods of incorporating the dyes with rubber seem to possess disadvantages, experiments were made to test the efficiency of introducing the dyes after they had been deposited upon fillers.

The general method of procedure was to make a solution of the dyestuff and place the particular filler in the liquid. The suspension was evaporated to dryness on a water-bath, ground and incorporated in the rubber. The result showed that dyes, which on compounding direct gave products which were not fast to water, now frequently produced fast vulcanizate. Thus Quinoline Yellow Base, Disulphide Blue V. showed no tendency to wash from the vulcanized product when compounded on the fillers. The deposition of the dyes on the fillers follows somewhat on the lines of lake formation. A difference, however, exists between the requirements of the paint and rubber industry. In the paint industry, the lake should contain the maximum amount of filler and the minimum of dye necessary to get the required shade whereas in rubber compounding the maximum amount of dye is required and the minimum amount of filler so that the required color may be obtained with the minimum addition of fillers to the mix. This is a point to which the attention of our lake manufacturers should be drawn.

(e) Selection of Fillers.—An examination was made of the best filler to serve the required purpose. Numerous possible compounds, such as, barytes, whiting, lithopone, titanium white, china clay, were tested and it was found that china clay gave what the author considered to be the best results.

Titanium white and lithopone were unsuitable as bases for the disposition of dye, as they reduced the effective color of the dye very considerably. In fact, the minimum coloring effect was obtained with titanium white. Barytes gave the maximum coloring effect but the shades were invariably of a somewhat harsh appearance, and the objection to the use of a heavy filler has to be considered. China clay gave almost equal intensity of color, the shade was only slightly more subdued and this filler does not possess the high specific gravity of barytes. Furthermore, the china clay materially increased the fastness of the dye in the vulcanizate both to light, water and benzene.

Test on Various Dyes

During the past few years, numbers of dyes have been tested to determine whether they will withstand the conditions of press and open steam cures. It has been found that they are comparatively few dyes which are destroyed during press vulcanization at 50 lbs. steam pressure in 30 minutes, so long as they are introduced into the rubber mix on a purified clay base.

Table 3 contains a list of dyes which have been tested (A) by adding the dye direct to the rubber mix (B) by incorporating on a clay base. In all cases 0.5 per cent of the dye on the total mix was used.

The constitution of the dyestuff has a definite influence on the fastness; thus, Disulphine Blue V is a diethylaniline derivative while Disulphine Blue A is the corresponding benzylethylaniline compound. The Disulphide Blue V is more readily soluble in water and gives a final vulcanizate even when compounded on a clay basis which is not fast to water. On the other hand, the compound of higher molecular weight is less soluble and produces a decidedly faster, but not absolutely fast, color when introduced into the rubber on refined china clay. (*see* Table 3, Nos. 24 and 25).

It is also noted that dyes which are very soluble in rubber such as Spirit Yellow and Spirit Red (i. e. dyes of the Sudan class) give finely colored vulcanized rubbers, but are unsuitable for general use as the color dissolves from one piece of rubber into another placed in contact with it. This disadvantage is not eliminated by introducing the dye on a clay basis but is distinctly diminished.

In view of the fact that the most propitious results were obtained by introducing the dyes on clay bases, a series of tests were made on lakes made by various pigment manufacturers. The results are given in Table 4 on next page.

The results obtained for press cures are remarkably favorable, but with open steam cures difficulties arise. Dyes which give good results in the press even with long cures seem incapable of withstanding the conditions of an open steam cure. What is the cause of failure is at present under investigation, and various means are being tested to overcome the difficulty.

Table 5, on next page, records the results of open steam cures of 30 minutes at 50 lbs. pressure.

The foregoing tests have shown that dyes will withstand the conditions of normal vulcanization up to 40 minutes at 50 lbs. steam pressure, but obviously the best results from the point of view of color will be obtained when the time and temperature of vulcanization and the percentage of fillers are reduced to the minimum. This fact seems to have been recognized much earlier by continental competitors than in the home industry and brilliantly colored articles are still being imported which might easily be produced in this country. The use of rapid accelerators is soon mastered and then brilliancy of color will readily be obtained. The samples exhibited show the magnificent colors which may be produced in an almost pure gum stock by vulcanizing with powerful accelerators. There is no reason why beautiful colors and serviceable quality should not be combined in the production of rubberware, and that a market exists for such sales is evident from the value of imports of brightly colored goods.

Blending

Mixing dyes to produce variations in shade is a matter for experiment. Many dyes mix satisfactorily to produce good results; thus, vulcafor red and vulcafor green give a good

TABLE 3
FASTNESS OF DYES INTRODUCED BY TWO METHODS

Dye		Appearance	Fastness to Water	Fastness to Benzene
1 Chlorazol Orange	A	Color destroyed	—	—
	B	Good Color	Fast	Fast
2 Tartarazine	A	Color destroyed	—	—
	B	Dull Yellow	Fast	Fast
3 Chrysoidine base	A	Good color	Not fast	Not fast
	B	Good color	Not fast	Not fast
4 Spirit Yellow AP.	A	Spotty	Fast	Nearly fast
	B	Good color	Fast	Nearly fast
5 Spirit Yellow 1.	A	Good color	Fast	Not fast
	B	Good color	Fast	Not fast
6 Quinoline Yellow base	A	Good color	Nearly fast	Not fast
	B	Good color	Nearly fast	Not fast
7 Napthol Yellow FLY.	A	Dull Yellow	Fast	Fast
	B	Brighter Yellow	Fast	Fast
8 Auramine Base	A	Little color	Fast	Fast
	B	Little color	Fast	Fast
9 Acronol Yellow T.	A	No color	—	—
	B	Dull yellow	Not fast	Fast
10 Acid Orange G.	A	Good color	Nearly fast	Fast
	B	Good color	Fast	Fast
11 Spirit Red 111.	A	Good color	Fast	Not fast
	B	Good color	Fast	Not fast
12 Durindone Red B.	A	Good color	Fast	Nearly fast
	B	Lighter shade	Fast	Nearly fast
13 Oil Red Base	A	Color in spots	Not fast	Not fast
	B	Good but uneven	Nearly fast	Nearly fast
14 Menolite Fast Scarlet R.	A	Good color	Fast	Nearly fast
	B	Lighter shade	Fast	Nearly fast
15 Durindone Red 3B.	A	Good but slightly spotty	Nearly fast	Nearly fast
	B	Good but slightly spotty	Fast	Fast
16 Safranine T. conc.	A	Spotty	Nearly fast	Nearly fast
	B	Good color	Nearly fast	Nearly fast
17 Magenta	A	Very spotty	Not fast	Nearly fast
	B	Good color-spotted	Nearly fast	Nearly fast
18 Bismark Brown base	A	Good color-spotty	Not fast	Not fast
	B	Good color-less spotty	Not fast	Not fast
19 Lake Green B.	A	Very good color	Fast	Fast
	B	Very good color	Fast	Fast
20 Acid Green G.	A	Color almost destroyed	—	—
	B	Dull green	Fast	Fast
21 Malachite Green base	A	Color destroyed	—	—
	B	Color destroyed	—	—
22 Light Green SF.	A	Color destroyed	—	—
	B	Dullish green	Fast	Fast
23 Indine Blue	A	Brown—spotty	Fast	Not fast
	B	Dark brown	Fast	Not fast
24 Disulphine Blue A.	A	Little color—spotty	—	—
	B	Very good color	Fast	Fast
25 Disulphine Blue V.	A	Rather spotty—poor color	Not fast	Fast
	B	Very good color	Nearly fast	Fast
26 Turquoise Blue G.	A	Spotty—little color	—	—
	B	Dull but even	Fast	Fast
27 Methylene Blue ZF.	A	Slightly uneven	Not fast	Not fast
	B	Good color	Not fast	Not fast
28 Soluble Blue 3M	A	Color almost destroyed	—	—
	B	Good color	Nearly fast	Fast
29 Methyl Violet base	A	Very spotty	Nearly fast	Nearly fast
	B	Good—slightly spotty	Fast	Fast
30 Duplex Black	A	Yellow—spotty	Nearly fast	Not fast
	B	Dull brown—slightly spotty	Nearly fast	Not fast

TABLE 4
PRESS CURES

Lake	% of Lake	Appearance	Fastness to Water	Fastness to Benzene
31 Blue Lake 622	13	Color crystals from vulcanizate	Not fast	Not fast
	6.5	Good	Fast	Fast
	3.0	Good	Fast	Fast
	1.5	Greenish shade	Fast	Fast
32 Orange Lake C.965	1	Good	Fast	Fast
33 Blue Lake 224	13	Deep color	Fast	Fast
	6.5	Good	Fast	Fast
	3.0	Good	Fast	Fast
	1.5	Good	Fast	Fast
34 Monolite Red No. 1.	2	Good	Fast	Fast
	1	Good	Fast	Fast
35 Green Lake C.966	2	Color changes slightly on vulcanization	Fast	Fast
36 Monolite Scarlet No 2	2	Good	Fast	Fast
	1	Good	Fast	Fast
37 Blue Lake C.967.	2	Color changes on vulcanization (grey)	Fast	Fast
	1	Ditto	Fast	Fast
38 Chlorazol Orange Lake	2	Color changes on vulcanization (poor color)	Not fast	Not fast
39 Disulphine Blue Lake	2	Color changes—poor color	Fast	Fast
40 Deep Crimson Lake C.982	3.3	Good color (mauve)	Fast	Fast
41 Green Lake C.980	2.25	Good	Fast	Fast
42 Black Lake B.S. C.981	1.7	Slate color	Fast	Fast
43 Yellow Lake C.983	3.3	Good	Fast	Fast
44 Deep Blue Lake C.976	2	Light blue	Fast	Fast
	1	Light blue	Fast	Fast
45 Yellow Lake C.975	2	Color not very bright but even	Fast	Fast
	1	Ditto	Fast	Fast
46 Blue Lake C.974	2	Good color	Fast	Fast
	1	Good color	Fast	Fast
47 Deep Carmine Lake 977	1	Color not even, spots	Not fast	Fast
48 Scarlet Lake 973	2	Good bright color	Fast	Not fast
	1	Good bright color	Fast	Not fast
49 Scarlet Lake 970	2	Good	Fast	Fast
	1	Good	Fast	Fast
50 Orange Lake 971	2	Dull but good	Nearly fast	Fast
	1	Dull but good	Nearly fast	Fast
51 Scarlet Lake 972	2	Dull—uneven color	Not fast	Fast
	1	Dull—uneven color	Not fast	Fast
52 Cochineal Lake 969	2	Good	Fast	Fast

TABLE 5
OPEN STEAM CURES

Lake	% of Lake	Appearance	Fastness to Water	Fastness to Benzene
31 Blue Lake 622	13	Good color	Not fast	Not fast
	6.5	Good color	Not fast	Nearly fast
	3.0	Good color	Not fast	Nearly fast
	1.5	Greenish shade	Nearly fast	Fast
32 Orange Lake C.965	2	Good	Fast	Fast
	1	Good	Fast	Fast
33 Blue Lake 224	13	Good	Fast	Fast
	6.5	Good	Fast	Fast
	3.0	Good	Fast	Fast
	1.5	Good	Fast	Fast
34 Monolite Red No. 1	2	Good color	Fast	Fast
	1	Dull color	Fast	Fast
35 Green Lake C.966	2	Color destroyed	—	—
36 Monolite Scarlet No. 2	2	Good color	Fast	Fast
	1	Duller but good	Fast	Fast
37 Blue Lake C.967	2	Color destroyed	—	—
	1	Color destroyed	—	—
38 Chlorazol Orange Lake	2.25	Poor	—	—
39 Disulphide Blue Lake	2.6	Color changes—poor color	Not fast	Not fast
40 Deep Crimson Lake C.982	3.3	Good color (mauve)	Fast	Fast
41 Green Lake C.980	2.25	Good	Fast	Fast
42 Black Lake BS. C.981	1.7	Slate color	Fast	Fast
43 Yellow Lake C.983	3.3	Good	Fast	Fast
44 Deep Blue Lake C.976	2	Fairly good color	Fast	Fast
	1	Greenish shade—good color	Fast	Fast
45 Yellow Lake C.975	2	Color not particularly bright but good	Fast	Fast
	1	ditto	Fast	Fast
46 Blue Lake C.974	2	Good color	Fast	Fast
	1	Good color	Fast	Fast
47 Deep Carmine Lake 977	2	Spotty color—not finely divided	Not fast	Not fast
	1	Ditto	Not fast	Not fast
48 Scarlet Lake 973	2	Good bright	Fast	Fast
	1	Good bright	Fast	Fast
49 Scarlet Lake 970	2	Good	Fast	Fast
	1	Good	Fast	Fast
50 Orange Lake 971	2	Fairly good	Not fast	Nearly fast
	1	Duller, but good	Not fast	Nearly fast
51 Scarlet Lake 972	2	Color in spots	Not fast	Fast
	1	Color in spots	Not fast	Fast
52 Cochineal Lake 969	2	Fairly good color	Fast	Fast

brown; vulcafor red and yellow, an orange; while a good blue lake and vulcafor red produce a violet. The particular tint depends obviously upon the proportions used.

In other cases, difficulties arise as one dye seems to rise preferentially to the surface of the rubber to produce an uneven effect. It appears to be impossible to predict which two dyes may be mixed with impunity and only a small scale experiment will suffice to determine this point.

With true lakes, this selective separation of the mixed dyes is not noticed to any extent, and while every mix should be tested, considerable freedom seems feasible in mixing lakes.

Selection of Accelerators

The selection of an accelerator for rubber containing a dye must obviously be one which will reduce the time and temperature of the cure to the utmost. Experiments have been made which show that diphenylguanidine is a good accelerator but in larger proportions than about 1 per cent tends to dull the final color. Accelerators such as tetramethylthiuram disulphide, and zinc diethyldithiocarbamate give rapid cures and brilliantly colored goods.

Summary

Azo-dyes of a neutral character appear to act as very mild accelerators of vulcanization, but in an accelerated stock, the mild accelerating influence of the dye is obscured by the more powerful action of the accelerator.

With a basic azo dye, such as Bismark Brown, it has been found that the dyestuff acts as an accelerator of the vulcanization of a pure gum stock.

It will also be observed that dyes may be divided roughly into two classes:—

(1) Dyes soluble in rubber. This class possesses the disadvantage that if a dyed piece of rubber is placed in contact with another piece of rubber, the dye dissolves from the first into the second piece of rubber. In this class a good blue and violet seem to be lacking.

(2) At the other extreme, we have dyes which are insoluble in rubber but which form lakes and thus depends on their power to cover a base or filler. For incorporation with rubber as a lake an extremely fine state of division is required to produce a uniform and fast colored product.

There should, however, be an intermediate class which at present appears to possess no useful representatives. These dyes should be sufficiently soluble in masticated rubber to secure an even distribution, but not so soluble that they will mark from one piece of rubber to another. It is this class which urgently requires enlarging and an appeal should be made to the dye manufacturers to supply dyes which will conform to the requirements of the rubber industry.

There is also an appeal which might be made to the lake manufacturers. The rubber industry wants lakes containing the maximum amount of dye and the minimum of filler and they must be supplied in absolutely the finest state of division. The selection of the base is also a matter of extreme interest, and bases which are suitable for the production of lakes for other industries may be quite unsuitable for the rubber industry.

RUBBER SYMPOSIUM NUMBER
September 10 issue of
THE RUBBER AGE

Will be read with interest by all executives and chemists who attend the symposium meetings. This issue will contain a complete program of events, abstracts of all papers, lists of speakers at the symposium and at the banquet, with photos of the various speakers.

Advertisers will find this issue of especial value in which to make announcements of interest to rubber executives, engineers and chemists.

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Watching the News

A COMMERCIAL side of the Philippine independence question which is not often enough emphasized has been brought to the fore by Director Arthur Fischer of the Bureau of Forestry of the Philippines who is now in the United States.

"The Philippines need us for a market and we need them," says Mr. Fischer. "What the United States imports from the islands in raw products is practically balanced by the manufactured goods sent to them. And the Philippines have the advantage of dealing with the best market in the world without a tariff wall.

"The Filipino has the advantage over Cuba of $1.76 per 100 pounds on sugar; he can underbid Ceylon on desiccated cocoanut, and he can also outstrip his competitors in tobacco, lumber and other products. He sends more than 60 per cent of his products to the United States. If the Filipino were granted complete independence, he would lose these important tariff privileges and have to struggle with other countries in the world's markets.

"Although the Filipinos do not think so themselves, they are more fortunately situated than any people in the world today. Among other things, they pay the lowest tax rate in the world, due partly, of course, to the fact that they do not have to go into their pockets to support an army and navy and diplomatic corps".

—o—

IN AN APPEAL to fellow manufacturers to withdraw from "insane" competition, Alexander Johnston, managing director of the North British Rubber Company at Edinburgh, has used the rubber belting trade of the United States and Great Britain to illustrate how such competition may pull down quality and ultimately ruin a market.

"Some fifteen or twenty years ago", said Mr. Johnston, "rubber belting was used quite extensively in this country. There followed a period of intensive competition. Prices were reduced, manufacturers reduced qualities and eventually almost all the rubber belting manufacturers of this country were offering belting which did not serve its purpose. The result was that after a certain number of years rubber belting almost went out of use in this country among engineering and industrial concerns. On the other hand, in America where a high quality of rubber belting has always been kept to the fore, rubber belting is almost universally used".

Mr. Johnston's statement will be of interest to many American manufacturers who have attempted to sell rubber belting in Europe. The fight to overcome the bad reputation which poor quality has earned for rubber belting has been a difficult one, and the return of European manufacturers to a high quality belting will aid rather than hinder an expansion in sales.

The United Kingdom has been a leading export market for many classes of American rubber goods but belting is not among them. Several Latin-American countries with less industrial activity have proven better customers for the rubber belting exporters.

—o—

MUD SLINGING during the current season of Congressional election campaigns is apparently to have some rubber slinging mixed with it. By the simple process of giving rubber the credit for Carmi Thompson's proposed recommendation that the question of Philippine independence be definitely postponed, the *New York World* achieves the following editorial which it entitles "Rubber Imperialism":

"The farce comedy, which has a touch of tragedy, of the Carmi Thompson mission to the Philippines is about to reach its climax in the recommendation that this country disregard its pledge to the Filipinos and postpone the independence of the islands indefinitely.

"That is what Carmi Thompson, hack politician, was sent to the islands to recommend. That is what Carmi Thompson knew he was going to recommend before he left. Representative Oldfield contends that that is what the Rubber Trust in this country knew he would recommend when they arranged this little comedy—which has a touch of tragedy.

"The islands do not belong to the Filipino people. They are to belong to the Rubber Trust and the sugar interests of the United States. That was the meaning of Herbert Hoover's survey. That is the purport of Carmi Thompson's mission.

"But the Rubber Trust will not pay the expenses of his mission—that, the Rubber Trust will considerately turn over to the Treasury of the United States.

"A little matter of national honor is involved, but what is national honor among friends bent on the exploitation of a people who cannot protect themselves? Every member of Congress who votes to change the land laws of the islands should be made to wear a rubber band about his neck, a badge of his servitude."

STATISTICAL SECTION

TIRES & TUBES
CRUDE RUBBER

AUTOMOBILES
GASOLINE

To the statistical table on page 463 of this issue, which covers the exports of crude rubber from producing countries, there have been added the latest figures on the exports from the Dutch East Indies through June of this year. The total exports from this area for the first six months of 1926 were 112,254 long tons compared with 108,998 tons for the corresponding period of last year. It is necessary, however, to lower the figures for exports from Other Dutch East Indies by one-third to allow for the moisture and other impurities which are removed before the rubber is re-exported. With this deduction the actual exports of dry rubber for the first six months of 1926 were 95,212 long tons and for the corresponding period in 1925 the total was 90,191 tons. The exports (in dry weight) from the separate territories for the first six months of this year were: Java and Madura, 27,762 tons; Sumatra East Coast, 33,366 tons; Other Dutch East Indies, 34,084 tons. This compares with exports of 23,058, 29,520 and 37,613 tons from the same areas for the corresponding period of 1925.

Average Spot Closing Prices--Ribbed Smoked Sheets

(New York Market)

Average Price per Pound for Years 1910-1920

Year	Cents	Year	Cents	Years	Cents
1910	206.60	1914	65.33	1918	60.15
1911	141.30	1915	65.85	1919	48.70
1912	121.60	1916	72.50	1920	36.30
1913	82.04	1917	72.23		

Average Monthly Price per Pound since 1921

Months	1921 Cents	1922 Cents	1923 Cents	1924 Cents	1925 Cents	1926 Cents
Jan.	19.18	18.82	32.73	25.86	36.71	79.50
Feb.	17.96	16.12	35.14	25.29	36.01	62.25
Mar.	17.05	14.53	34.21	22.83	41.00	59.00
Apr.	16.73	15.99	32.48	22.51	43.64	51.25
May	15.82	15.25	27.39	19.89	58.47	47.75
June	12.49	15.11	26.88	18.81	77.26	42.50
July	14.01	14.67	26.10	22.16	103.16	41.03
Aug.	14.04	13.93	28.84	26.17	82.99	
Sept.	14.53	14.44	28.95	27.56	88.88	
Oct.	16.02	19.78	26.93	31.13	98.01	
Nov.	18.06	23.88	27.14	34.33	104.80	
Dec.	20.47	27.42	26.60	37.88	98.51	
Average for Year	16.36	17.50	29.45	26.20	72 46	

London Closing Prices of Ribbed Smoked Sheet

(In pence per pound)

Fourth Restriction Year—Fourth Quarter

Day	Aug.	Sept.	Oct.	Day	Aug.	Sept.	Oct.
1	—			16	19½		
2	—			17	19⅝		
3	18⅞			18			
4	18½			19			
5	18⅞			20			
6	19½			21			
7	19½			22			
8	—			23			
9	19			24			
10	19¼			25			
11	19			26			
12	19⅜			27			
13	19½			28			
14	19½			29			
15	—			30			
				31			

(The average price for the period for which daily prices are reported above is approximately 19.231 pence. The British Colonial Secretary has announced that only 80% of the standard production will be exportable from the restricted area during the next quarter if the price during the entire current quarter does not average at least 21 pence.)

Average Price in Previous Quarters

Quarter	1922-23	1923-24	1924-25	1925-26
Nov-Jan	14.285	14.175	17.9983	46.709
Feb-Apr	16.858	12.917	19.356	28.103
May-July	14.242	10.974	38.469	21.001
Aug-Oct	14.944	14.632	43.269	

U. S. Imports and Exports of Crude Rubber.

YEARS	Gross Imports: Long Tons	Gross Imports: Total Declared Value	Gross Imports: Average Declared Value per pound Cents	Re-exports: Long Tons	Re-exports: Total Declared Value	Re-exports: Average Declared Value per pound Cents	Net Imports Long Tons
1900	22,026	$28,577,789	57.92	1,718	$2,839,668	73.77	20,308
1901	24,617	28,120,218	51.00	1,663	2,425,727	65.11	22,954
1902	22,702	25,158,591	49.47	1,457	1,877,698	57.52	21,245
1903	24,886	35,152,642	63.06	1,646	2,598,416	70.47	23,240
1904	27,629	43,784,297	70.75	1,540	2,749,234	79.70	26,089
1905	28,637	48,517,906	75.63	1,616	3,149,989	87.00	27,021
1906	30,316	53,391,137	78.62	1,676	3,153,775	84.02	28,640
1907	30,649	49,813,361	72.56	1,832	3,509,902	85.55	28,817
1908	34,058	44,696,526	58.59	1,655	2,466,428	66.52	32,403
1909	41,950	79,264,817	84.35	2,161	4,233,921	87.46	39,789
1910	40,241	98,007,295	108.73	2,749	8,134,064	132.07	37,494
1911	36,987	74,410,550	89.81	2,523	4,977,174	88.07	34,464
1912	52,705	99,567,071	84.34	2,456	4,692,262	85.31	50,249
1913	51,732	76,820,739	66.29	1,881	3,396,429	80.62	49,851
1914	63,868	70,472,704	49.26	2,618	3,244,346	55.32	61,250
1915	98,876	111,031,144	50.13	2,082	2,357,350	50.54	96,794
1916	120,576	159,745,475	59.15	4,098	5,330,100	58.07	116,478
1917	181,089	233,220,904	57.49	4,000	5,305,289	59.21	117,089
1918	145,518	146,378,313	44.91	2,746	3,133,622	50.95	142,772
1919	239,259	215,820,113	40.27	2,282	2,205,629	43.15	236,977
1920	252,922	242,795,773	42.86	4,160	2,846,898	30.55	248,762
1921	185,394	73,772,677	17.76	5,716	2,414,924	18.86	179,678
1922	301,076	101,843,188	15.10	4,809	1,921,828	17.84	296,267
1923	309,144	185,060,304	26.72	8,772	5,672,319	28.87	300,372
1924	328,056	174,231,331	23.71	10,309	6,057,637	26.23	317,747
1925:							
Jan.	32,898	22,406,756	30.41	1,162	963,593	37.02	31,736
Feb.	24,696	18,532,115	33.50	979	779,406	35.53	23,717
Mar.	33,072	25,146,691	33.94	1,345	1,105,119	36.69	31,727
Apr.	32,506	24,874,562	34.16	1,130	1,009,305	39.86	31,376
May	36,932	30,311,754	36.64	1,203	1,323,445	49.12	35,729
June	31,569	26,855,883	37.98	1,198	1,577,106	58.75	30,371
July	32,455	33,701,723	46.36	1,278	2,132,681	74.52	31,117
Aug.	33,412	39,834,348	53.22	1,131	1,623,258	64.08	32,281
Sept.	26,367	36,686,013	62.11	1,154	1,820,360	70.41	25,213
Oct.	34,651	50,027,338	64.45	1,132	1,989,291	78.43	33,519
Nov.	37,755	56,271,963	66.54	1,605	2,898,930	80.65	36,150
Dec.	40,329	65,055,868	72.02	1,510	2,625,259	77.61	38,819
	396,642	429,705,014	48.36	14,827	19,847,753	59.76	381,815
1926:							
Jan.	42,404	72,528,151	76.36	2,084	3,747,505	80.28	40,320
Feb.	32,865	58,733,370	79.78	1,430	2,280,168	71.17	31,435
Mar.	42,152	70,589,581	74.76	1,836	2,735,234	66.51	40,316
Apr.	34,544	48,742,539	62.99	1,128	1,605,093	63.58	33,416
May	29,756	36,896,080	55.35	1,052	1,558,987	66.17	28,704
June	24,900	34,498,561	61.85	1,105	1,371,217	55.41	23,795
July							
Aug.							
Sept.							
Oct.							
Nov.							
Dec.							

United States Tire and Tube Statistics[1]

Production, Sales, and Inventories[2]

AUTOMOBILE CASINGS

	Production During Month					Sales During Month					Inventory at End of Month				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Jan.	2,740	4,170	4,294	4,740	4,721	2,194	4,114	3,785	4,013	2,974	5,566	6,261	6,411	7,949	9,947
Feb.	2,779	4,291	4,372	4,908	4,865	2,144	3,568	3,849	3,924	3,436	6,255	6,966	7,020	8,928	11,164
Mar.	3,528	5,154	4,570	5,276	5,456	2,847	4,570	3,988	4,657	4,561	6,911	7,561	7,684	9,510	12,004
Apr.	3,202	4,719	4,410	5,341	5,346	2,853	4,106	4,018	5,498	4,980	7,286	8,118	8,219	9,088	12,461
May	3,629	4,880	4,051	5,467	5,023	3,608	3,793	3,693	5,954	5,211	7,364	9,209	8,442	8,611	12,343
June	2,785	3,943	3,506	5,418	5,422	4,281	3,448	3,671	6,737	5,724	6,723	9,387	8,207	7,243	11,968
July	3,302	2,657	3,403	5,587		3,678	3,463	4,748	6,298		6,445	8,628	6,851	6,421	
Aug.	3,874	3,141	4,313	5,607		4,153	3,803	5,010	4,760		6,173	8,078	5,969	7,261	
Sept.	3,340	2,706	4,708	5,007		3,407	3,563	4,539	4,569		6,149	7,197	6,033	7,681	
Oct.	3,566	3,148	5,169	4,505		3,534	3,821	4,196	5,580		6,244	6,502	7,118	6,670	
Nov.	3,644	3,200	4,253	4,229		3,248	3,408	4,480	3,671		6,620	6,252	6,943	6,955	
Dec.	3,543	3,250	4,584	4,760		4,040	3,547	4,143	3,601		6,132	5,772	7,427	8,142	
	40,932	45,259	51,633	60,845		39,987	45,204	50,120	59,262						

AUTOMOBILE INNER TUBES

	Production During Month					Sales During Month					Inventory at End of Month				
	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926	1922	1923	1924	1925	1926
Jan.	3,125	5,269	5,184	6,343	6,809	2,552	5,091	4,723	5,576	3,723	6,996	7,784	8,960	11,570	14,361
Feb.	3,462	5,386	5,424	6,339	6,825	2,310	4,085	4,530	4,971	3,736	8,189	9,029	9,786	13,023	17,090
Mar.	4,023	6,501	5,625	7,000	7,030	2,848	5,214	4,667	5,711	4,987	9,321	10,321	10,877	14,236	19,131
Apr.	3,534	5,679	5,380	6,851	6,554	3,162	4,825	4,782	6,704	5,051	9,640	11,192	11,503	13,618	20,674
May	3,961	5,757	4,992	6,846	6,149	3,995	4,651	4,865	8,040	6,304	9,586	12,390	11,682	12,501	21,141
June	4,174	4,787	4,658	6,942	6,171	5,391	4,882	5,286	9,032	6,898	8,249	11,899	10,888	10,409	20,243
July	4,091	3,500	5,143	7,544		4,905	5,374	7,190	9,140		7,568	9,862	8,845	8,635	
Aug.	5,078	4,771	6,688	7,618		5,733	5,800	7,493	6,923		6,943	9,267	7,678	9,271	
Sept.	4,669	4,339	7,342	7,254		4,797	4,966	6,908	6,665		6,886	8,610	8,052	9,950	
Oct.	5,050	5,140	7,861	6,612		4,618	4,848	5,700	7,845		7,317	9,198	9,803	8,726	
Nov.	5,135	4,602	6,136	6,266		4,165	4,604	6,332	5,406		8,280	8,925	10,224	9,491	
Dec.	4,548	4,385	6,273	6,999		5,197	4,732	5,540	4,991		7,643	8,425	11,052	11,313	
	50,850	60,116	70,706	82,614		49,673	59,072	68,016	81,004						

(1) *Statistics of The Rubber Association of America, raised to 100%.* (2) *All figures expressed in thousands.*

Stock of Crude Rubber in United States and London

(All Quantities in Long Tons)

UNITED STATES

At End of	ON HAND			AFLOAT			ON HAND AND AFLOAT		
	1924	1925	1926	1924	1925	1926	1924	1925	1926
Jan.	——	60,870	55,198	——	36,759	46,296	——	97,629	100,434
Feb.	——	54,109	58,035	——	41,475	46,935	——	95,584	104,970
Mar.	——	52,494	61,822	——	40,577	43,567	——	93,071	105,389
Apr.	——	50,143	55,261	——	53,465	41,905	——	103,608	97,166
May	——	52,064	64,360	——	46,846	40,303	——	98,910	104,663
June	——	50,997	60,460	——	51,202	40,907	——	102,199	101,367
July	——	46,245	64,900	——	46,003	38,062	——	92,248	102,962
Aug.	——	42,354		——	41,254		——	83,608	
Sept.	——	36,367		——	55,151		——	91,518	
Oct.	55,378	34,085		46,359	51,098		101,737	85,183	
Nov.	59,017	34,885		35,685	42,692		94,702	86,577	
Dec.	56,080	51,215		46,216	48,208		102,296	99,423	

(Rubber Association of America figures raised to 100%.)

LONDON

(In Wharves and Warehouses—Figures Include Latex)

At End of:	1920	1921	1922	1923	1924	1925	1926
January	19,300	56,573	67,232	73,498	57,460	27,172	9,994
February	18,329	59,439	67,623	70,483	56,732	23,425	10,004
March	18,969	63,913	66,670	63,438	55,647	18,104	13,750
April	20,072	68,759	68,637	58,770	54,559	12,949	18,951
May	20,921	70,403	70,146	54,439	51,615	5,895	20,896
June	22,517	69,408	71,597	51,050	51,115	5,318	25,063
July	25,346	71,065	71,515	49,937	52,073	4,258	27,766
August	30,674	73,211	72,112	48,427	49,700	4,619	
September	35,504	72,175	70,977	54,523	44,011	5,453	
October	41,743	69,229	68,536	58,891	37,523	5,086	
November	45,550	70,786	68,548	60,074	33,593	3,869	
December	50,652	69,792	72,299	60,246	29,488	5,697	

United States Consumption of Gasoline

(Gallons)

MONTHS:	1918	1919	1920	1921	1922	1923	1924	1925	1926
January	144,579,291	169,240,627	236,073,140	294,750,791	282,717,148	456,967,163	500,420,689	595,413,000	720,358,000
February	147,204,377	185,900,192	248,395,214	225,195,372	262,925,732	380,093,070	402,703,876	543,640,000	650,718,000
March	219,333,317	201,004,317	256,020,539	346,164,546	380,406,778	446,460,208	467,181,088	625,053,000	779,571,000
April	265,151,411	243,440,615	297,000,463	333,290,921	385,230,994	485,716,788	607,175,026	798,305,000	831,410,000
May	313,824,603	327,610,273	378,912,692	354,263,486	499,724,405	582,535,781	672,495,321	841,787,000	989,857,000
June	306,677,723	305,960,438	427,747,291	442,924,973	506,959,446	633,504,590	682,409,140	868,350,000	969,051,000
July	353,589,555	396,242,260	434,878,617	457,758,078	566,099,329	674,019,467	789,666,590	963,071,000	
August	339,435,744	376,484,274	479,741,391	505,035,827	583,687,932	692,154,000	828,057,647	931,901,000	
September	284,685,213	367,633,742	450,888,670	438,083,634	507,924,207	655,797,616	718,068,623	848,867,000	
October	299,642,892	338,429,709	384,802,246	454,995,551	490,393,454	621,172,668	751,499,199	831,774,000	
November	245,278,844	284,620,809	366,567,344	350,548,481	471,616,103	538,308,809	698,359,199	757,744,000	
December	209,863,377	238,245,230	289,673,556	313,015,596	434,399,514	518,305,120	657,967,000	759,699,000	
TOTAL	3,129,266,347	3,434,812,486	4,250,696,163	4,516,027,256	5,372,085,042	6,685,035,260	7,770,238,000	9,365,604,000	

Exports of Crude Rubber from Principal Producing Countries

(Figures in Long Tons)

	British Malaya[1]								Dutch East Indies[5]			French[3]		
	Gross Exports	*Imports*	*Net Exports*	*Ceylon*[2]	*India & Burma*[3]	*Br. North Borneo*[4]	*Sarawak*[4]	*Siam*[4]	*Java & Madura*	*Sumatra E. Coast*	*Other D.E.I.*	*Indo-China*	*Amazon Valley*[6]	*Total*[7]
1923	252,016	70,432	181,584	37,112	6,416	5,433	1,744	1,718	32,938	44,002	57,822	5,606	19,859	394,263
1924	259,760	107,419	152,341	37,351	7,697	6,485	1,892	2,962	42,446	52,499	80,347	6,688	23,164	413,872
1925	316,825	158,022	158,803	45,684	10,082	8,460	2,308	5,378	46,643	62,678	119,271		25,307	
1925:														
Jan.	19,183	10,132	9,051	3,065	1,090	605	180	404	3,053	5,097	5,858	701	1,712	30,816
Feb.	21,622	10,071	11,551	2,207	1,121	469	148	283	3,490	5,139	8,569	586	2,977	36,540
Mar.	26,836	13,399	13,437	4,201	984	756	209	437	4,583	5,499	10,807	487	2,459	43,859
Apr.	22,414	11,751	10,663	3,250	684	483	164	384	4,121	4,663	8,536	482	1,585	35,015
May	26,667	12,979	13,688	2,600	585	717	189	489	3,624	4,455	12,006	599	2,588	41,540
June	27,894	14,706	13,188	3,502	831	1,046	195	430	4,187	4,667	10,644	833	1,653	41,176
July	24,809	16,192	8,617	4,487	680	955	218	533	4,719	5,244	10,516	411	1,142	37,522
Aug.	27,753	12,025	15,728	3,409	671	548	194	436	3,210	5,186	9,445	484	1,810	41,121
Sept.	29,425	12,913	16,512	4,758	745	766	218	533	3,364	4,913	10,628	764	2,140	45,341
Oct.	28,711	14,986	13,725	5,270	516	639	199	708	3,516	5,511	11,767	683	2,240	44,774
Nov.	31,648	14,904	16,744	3,980	1,044	838	186	411	4,657	6,349	11,958	991	2,620	49,778
Dec.	29,863	13,964	15,899	4,955	1,131	638	208	330	4,119	5,955	8,537	860	2,381	45,013
	316,825	158,022	158,803	45,684	10,082	8,460	2,308	5,378	46,643	62,678	119,271	7,881	25,307	492,495
1926:														
Jan.	30,452	10,237	20,433	4,058	1,273	416	196	288	4,397	6,277	8,081	915	1,284	47,618
Feb.	30,440	8,306	22,134	4,941	725	488	141	253	4,474	5,734	6,801	554	2,759	49,004
Mar.	35,012	14,800	20,212	5,708	1,113	792	232	418	4,865	5,612	11,880	640	2,126	53,598
Apr.	23,727	10,565	13,162	3,484	590	679	251	294	4,522	4,598	6,208		2,318	
May	31,231	10,604	20,627	3,600	691				4,742	5,293	8,606		1,353	
June	30,624	11,764	18,860	3,906	452				4,762	5,852	9,550			
July	28,824	15,280	13,544											
Aug.														
Sept.														
Oct.														
Nov.														
Dec.														

(1) Malayan net exports cannot be taken as Malayan production since much of the imported rubber contains a high percentge of moisture and impurities which are eliminated before it is re-exported; the Malayan figures do not contain rubber exported as latex which on the basis of 3 pounds per gallon amounted to 99 tons in 1923, 957 tons in 1924 and 3,101 tons in 1925. (2) Ceylon Chamber of Commerce statistics until 1926. (3) Official statistics. (4) Figures for Sarawak, British North Borneo and Siam are imports from these territories into Singapore through which port practically their entire production moves. (5) Exports from "Other Dutch East Indies" are chiefly native rubber which contains one-third of moisture and impurities for which no allowance has been made in the statistics; rubber shipped as latex has not been included and amounted to 6,355 tons in 1923, 2,735 tons in 1924 and 6,207 tons in 11 months of 1925. (6) Exports through Para, Manaos and Iquitos. (7) This total includes the net exports from British Malaya and all the figures shown for the other territories.

Net Imports of Crude Rubber into Principal Manufacturing Countries

(Long Tons)

	United States	*United Kingdom*	*France* (abd)	*Germany*	*Canada* (ac)	*Japan* (ac)	*Italy*	*Russia* (ce)	*Australia* (cf)	*Belgium* (d)	*Netherlands*	*Sweden* (abcd)	*Norway* (abc)	*Denmark* (abd)
1919	236,977	42,671	19,951	5,584	8,770	10,688	9,894	75	733	3,995	2,771	2,022	437	673
1920	248,762	56,844	15,868	11,890	11,912	6,015	6,123	62	1,040	3,840	5,510	1,567	241	479
1921	179,678	42,087	16,981	21,920	8,248	22,981	3,906	165	554	1,705	1,022	813	178	251
1922	296,267	11,724	27,644	27,546	9,366	16,449	6,430	2,453	2,649	172	–3,807	1,248	321	87
1923	300,372	12,700	31,067	18,519	13,299	17,181	8,489	4,506	1,631	2,184	792	1,391	448	354
1924	317,747	–11,550	34,488	22,727	14,420	19,612	8,764	824	3,127	2,688	–807	1,781	669	473
1925	381,815	4,061	36,911	33,937	19,825	12,743	11,412	7,088	4,217	2,930	875	1,690	701	440
1925:														
January	31,736	–284	2,147	4,303	1,432	797	552	333	192	331	109	164	64	16
February	23,717	–2,492	3,529	3,690	1,278	658	908	1,000	338	275	88	136	145	37
March	31,727	–3,396	3,924	2,784	2,349	689	1,463	1,083	357	373	56	183	77	71
April	31,376	–2,961	3,069	3,574	1,397	719	817	535	314	97	181	149	47	22
May	35,729	–8,650	3,223	3,834	1,532	863	1,060	1,999	385	228	47	126	47	16
June	30,371	619	2,387	3,239	1,681	2,095	1,506	59	378	329	120	97	43	74
July	31,177	2,204	1,827	2,606	1,613	813	650	16	341	176	28	114	45	24
August	32,281	3,825	1,109	2,942	1,582	786	631	85	297	169	76	119	53	35
September	25,213	5,369	4,633	2,667	1,302	936	939	234	429	283	136	102	54	20
October	33,519	1,203	3,039	2,325	1,799	1,060	914	21	243	255	60	159	38	38
November	36,150	2,466	4,654	1,260	1,712	2,140	1,157	190	512	236	–12	219	55	52
December	38,819	6,158	3,370	713	2,248	1,187	815	1,533	431	178	–14	122	33	35
1926:														
January	40,320	6,439	3,170	703	2,188	892	760	332	358	76	154	123	46	51
February	31,435	3,114	3,513	1,113	1,685		1,041	643	432	275	89	171	82	94
March	40,316	8,907	4,790	1,342	2,079		1,037	832	469	129	227	213	31	55
Apr.	33,416	8,275	4,834	1,781	1,615		865	402			93	204	27	23
May	28,704			1,848				200			241	110	24	47
June	23,795	5,894		1,655				983			214	178		
July														
Aug.														
Sept.														
Oct.														
Nov.														
Dec.														

a—Including gutta percha. b—Including balata. c—Reexports not deducted. d—Believed to include scrap and reclaimed rubber. e—Russian statistics are exports from United Kingdom only to Russia. f—Australian annual statistics including 1924 are exports to Australia from Malaya, Ceylon, Dutch East Indies and United Kingdom; monthly figures and total for 1925 are exports from Malaya, Ceylon, and Java only. –Minus sign, reexports in excess of imports. *All statistics from original official trade returns.*

Daily Spot Closing Prices of Ribbed Smoked Sheet Rubber—*New York Market, in Cents per Pound*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31 Average
1924																															
Jan.	25½	26¼	26½	26½	26½	25¼	26½	26½	26½	26¾	26⅜	26⅜	—	25⅝	26¼	25¼	26⅛	25⅝	25½	25	25⅛	25¼	25	24⅞	25¾	25½	—	25⅝	25	25⅛	25
Feb.	25⅝	25⅝	—	—	25⅞	24½	25⅝	25⅝	25⅝	—	25⅝	—	25½	25⅝	25¼	—	—	25⅝	25⅝	25⅛	25⅛	25¼	25⅛	25⅛	25⅝	25⅝	25⅝	25⅝	—	—	25⅛
Mar.	25¼	—	24⅜	24	24¼	24¼	24⅞	24¼	23⅞	23⅝	23¾	23⅜	22⅞	23⅜	23⅛	22¼	22¼	22½	22½	22½	21¾	21⅝	22⅜	22⅜	21⅞	21⅝	21⅝	22	22	—	22
Apr.	22⅝	22⅞	22⅞	22	22⅜	22¼	22¼	22⅜	22¼	22¼	22¼	22¼	22¼	22⅜	22¼	22¼	22¼	22¼	22⅜	22⅜	22⅜	22⅜	22⅜	22⅜	22⅜	22⅜	23	22⅝	22⅝	22⅝	22⅝
May	22¾	21⅞	22⅛	—	21⅜	21⅜	21⅜	21	21	21⅜	—	20⅞	20⅞	20	20	19⅞	20	19⅞	19⅞	19⅞	19⅞	19⅞	19⅞	19⅜	18⅝	18⅝	18⅝	18⅝	18⅝	18⅝	19⅛
June	—	19⅛	19⅛	19⅜	19⅜	19½	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜	19⅜
July	18⅜	19⅛	19⅜	—	19⅜	—	19⅜	—	20⅛	20⅜	20⅜	21⅛	21⅛	21	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜	21⅜
Aug.	23⅜	23⅝	—	24	26⅜	25½	27¼	27¼	27	27¼	27¼	27⅜	25⅜	25	25	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜	25⅜
Sept.	25⅜	26⅜	26½	26¾	26⅜	26½	26¾	26¾	27	27¼	27¼	27⅜	27⅜	27⅜	27⅜	27⅜	27⅜	27⅜	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞	26⅞
Oct.	25⅞	29⅜	29½	29⅜	—	29⅜	29⅜	29½	29½	30	31	—	31½	31½	30⅜	30⅜	31½	31½	31¼	31¼	32¼	32⅜	32⅜	32⅜	32⅜	32⅜	32⅜	32⅜	32⅜	32⅜	32⅜
Nov.	34¾	—	34⅝	—	34⅞	34¾	34¾	34½	—	34⅝	34⅝	34⅝	34	34	34½	34½	34	34	34	34	34	33⅝	34	34	34⅜	34⅜	34⅜	34⅜	34⅜	34⅜	34⅜
Dec.	35⅛	35⅛	36	36⅜	36⅜	37⅜	—	38	37⅝	37⅝	37⅞	37½	37½	37⅜	37⅜	37⅜	37⅜	38	38¼	38⅛	—	38⅝	38⅝	38⅝	38⅝	38⅝	38⅝	—	39⅛	40⅛	37⅞
1925																															
Jan.	—	—	39⅞	39⅜	39	39	39¼	38⅛	38⅜	38⅜	—	37⅞	36½	36⅜	35⅝	35⅝	35⅝	35⅝	34⅞	34⅜	35	35⅛	36¼	36⅛	35⅝	35⅝	35⅝	35⅝	35⅝	35⅝	36⅜
Feb.	—	—	35⅜	34½	34½	34½	35⅜	—	34⅜	35⅛	35⅛	—	35⅜	35	—	—	36⅜	36⅜	36¼	36⅜	36⅜	36⅜	—	37⅛	37⅛	37⅛	37⅛	37⅛	—	—	36
Mar.	—	—	38⅜	38⅜	38⅜	39⅜	39⅜	39⅜	39⅜	40⅛	40½	40½	40⅜	40⅛	40⅛	40⅜	40⅜	40⅜	41¼	41⅛	41⅛	41⅛	42⅛	42⅛	42⅛	42⅛	43⅛	43⅛	43⅛	42⅜	41
Apr.	41¼	41⅜	41⅜	41⅜	—	42⅛	42⅜	43⅛	43⅜	43⅜	—	44⅛	44⅛	44⅜	44⅜	44⅜	44⅜	44⅜	44⅜	44⅜	44⅜	43⅞	43⅞	43⅞	44⅛	44⅛	44⅛	44⅛	44⅛	44⅛	43⅝
May	45	45⅜	—	47⅜	46⅞	48⅜	50⅜	52½	52½	55⅞	59	57	57	59¼	60⅜	64¼	64¼	63	63	63	63	63	63	63	63	63	63	63	63	63	58½
June	69½	72	74⅜	76½	75¾	75¾	73⅝	74⅜	74⅜	74	75¼	76	74⅜	74	71⅜	69⅝	69⅝	69⅝	75½	76½	76½	79¼	83⅛	85⅜	82⅝	82⅝	89⅜	89¾	93¼	90¼	77½
July	81⅝	81⅞	85⅝	—	88¼	88¼	90½	95¼	94⅜	99⅜	99½	106¼	110⅜	105⅝	110⅜	117	116⅜	118⅝	121	117⅛	119	117⅞	112¼	112¼	85⅞	87	107⅝	96⅜	93¼	90¼	103⅛
Aug.	94⅛	95⅛	95½	88¾	85⅜	86¾	81⅝	79	80½	83	86½	92½	97⅜	93⅜	77⅝	80⅜	78¼	80½	80½	82½	82½	82	82½	82½	85¼	85¼	85¼	87¼	87¼	83	83
Sept.	88¾	87¼	85	81¼	81¼	81¼	—	—	78¼	99	95½	97½	95½	97	99¼	99¼	99	101	102	99¼	92	93½	93½	90	89	89	89⅝	91⅝	91⅛	91⅛	88⅞
Oct.	91¼	91¼	92	—	94½	97	97½	99	99	101	99½	100¼	101¾	105½	101	107	107	107	101¼	102	99¼	99¼	99¼	99¼	99	98	99¼	101½	99¼	100¼	98
Nov.	—	99¾	—	98¾	98¾	100	100¼	—	108	109	109½	106	105½	105½	—	101	99¼	90¼	93	107	109¾	110¼	110¼	109	106¼	—	108¼	108¾	—	107	104¾
Dec.	106¾	108½	107¾	107¾	108¼	—	108	109	109½	106	105	—	99¼	99¼	99¼	90¼	88¼	86¾	—	88¼	88¼	90¼	88¾	88¾	88¾	—	91	—	93	91¼	98½
1926																															
Jan.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Feb.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mar.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apr.	67	67½	66¼	66¾	66½	69	—	69	67	65	66	66	66	63	63	62	60½	60½	59	60	60	60	61	61	61	61	61	61	61	61	62¼
May	55	58	53	53½	53½	57½	—	—	55½	61	60	63	61½	62	62	62	62	62	61	62	62	61	61	61	61	61	61	61	61	61	59
Apr.	59	—	59	—	59	58	56	56	53	53	51¾	51¾	50½	49¼	48½	47½	47½	47	47	47	47	47	47	47	49	48	48	48	48	58	51¼
May	48½	—	50	50¾	49½	49¾	49¼	49½	49	49	49½	48½	47¾	47½	47½	47½	47½	47½	47½	47½	47½	47½	46¾	46	46	45	45	43	43	48	47¼
June	41¾	42	41½	41¾	41¾	—	41½	41½	42	42	43	43	43	43	43	43	43	43	43	43	43	44	44	43	43½	42	42	42	42	42	42½
July	42	42	42	—	41¾	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	41½	40	40	40	40	40	41	41½	41½	41½	41	41	41	41	41½
Aug.	—	38¾	38½	37	37	38¼	39	—	38¼	37¾	37¾	37½	37½	37½	37½	37½	37½	38	—	38	38	38	38	38	38	38	38	38	38	38	38
Sept.																															
Oct.																															
Nov.																															
Dec.																															

Automobile Production

	Passenger Cars			Trucks		
	Total	United States	Canada	Total	United States	Canada
1920	1,883,158	1,799,522	83,636	322,039	311,531	10,508
1921	1,514,000	1,452,902	61,098	147,550	142,402	5,148
1922	2,397,827	2,302,923	94,904	251,434	244,285	7,149
1923	3,719,164	3,589,936	129,228	378,288	361,078	17,210
1924						
January	293,824	283,983	9,841	30,785	29,038	1,747
February	343,460	331,388	12,072	32,974	31,295	1,679
March	357,045	341,851	15,194	36,505	34,466	2,040
April	346,405	331,957	14,448	38,037	36,104	1,933
May	286,324	271,033	15,291	35,408	33,655	1,753
June	225,079	214,322	10,757	29,135	28,185	950
July	244,544	235,925	8,619	26,448	25,341	1,107
August	255,232	249,796	5,436	28,714	27,834	880
September	263,528	256,940	6,588	32,015	30,663	1,351
October	260,881	254,524	6,357	32,533	31,263	1,270
November	204,343	198,381	5,962	27,956	26,875	1,081
December	182,099	174,899	7,200	27,596	25,906	1,690
Total	3,262,764	3,144,999	117,765	378,106	360,625	17,481
1925						
January	212,921	204,620	8,301	28,198	26,633	1,565
February	252,803	242,024	10,779	34,467	32,774	1,693
March	332,154	319,140	13,014	45,168	43,079	2,089
April	391,302	375,787	15,515	47,898	46,322	1,576
May	382,714	364,363	18,351	43,380	41,492	1,888
June	364,806	350,557	14,249	38,141	36,347	1,794
July	358,554	347,414	11,140	41,915	40,070	1,845
August	221,831	214,401	7,430	37,843	36,357	1,486
September	272,425	262,053	10,372	60,452	57,972	2,480
October	406,572	392,651	13,921	46,003	44,309	1,694
November	336,358	327,617	8,741	40,077	37,840	2,237
December	285,199	277,701	7,493	34,477	32,746	1,731
Total	3,817,639	3,678,328	139,311	498,019	475,941	22,078
1926*						
January	284,174	272,922	11,252	32,738	29,763	2,978
February	325,658	319,763	15,895	40,880	37,599	3,283
March	399,389	381,116	18,273	48,708	44,842	3,868
April	403,850	383,907	19,943	53,304	50,312	2,996
May	396,168	373,140	23,028	50,740	47,838	2,905
June	——	339,542	—	—	44,033	—
July						
August						
September						
October						
November						
December						

*Revised Figures

U. S. Consumption of Crude Rubber

(Rubber Association of America statistics raised to 100 per cent—All figures in long tons)

	1921	1922	1923	1924	1925	1926
January	5,045	16,938	30,106	29,058	29,638	32,196
February	5,955	14,767	30,149	25,736	29,761	31,136
March	9,190	21,408	36,629	28,385	33,498	32,936
April	13,084	19,294	29,085	27,129	34,139	32,696
May	16,023	23,246	36,155	25,845	35,322	29,364
June	16,142	31,713	24,272	22,753	35,822	28,598
July	18,310	24,522	17,685	23,396	36,053	27,577
August	23,640	29,361	20,359	28,962	35,909	
September	16,705	24,410	17,594	31,497	31,691	
October	16,814	26,881	21,321	31,520	29,047	
November	14,105	24,950	20,437	27,289	28,853	
December	15,482	25,070	21,902	27,199	28,748	
TOTALS	170,504	282,560	305,694	328,769	388,481	

Monthly statistics covering shipments of various classes of rubber goods from the United States may be secured free of charge from the Rubber Division, Bureau of Foreign & Domestic Commerce, Washington, D.C.

The Market Place

WHERE TO OBTAIN
Machinery, fabrics, chemicals, compounding ingredients, crude and reclaimed rubber, consulting chemical
1.

ACCELERATORS—X L O and Diphenyl Guanidine.
Dovan Chemical Corp.
30 Church St. New York

ACCELERATORS — Two new accelerators: Vulcone and Di-ortho-tolylguanidine.
E. I. du Pont de Nemours & Co., Inc.
Dyestuffs Dept. Sales Div.
Wilmington, Del.

ACCELERATORS
Grasselerator 102
Grasselerator 552
Grasselerator 808
Grasselli Chemical Co.
Rubber Service Dept.
347 Madison Ave., New York

ACCELERATORS— Every lot is tested before shipment and a written guarantee of quality furnished.
Roessler & Hasslacher Chem. Co.
709 Sixth Ave. N. Y. City

ACCELERATORS—A19, A7, Thiocarbanilid.
The RUBBER SERVICE Laboratories Co.
611 Peoples Savings & Trust Bldg.
Akron Ohio

ANTIMONY Pentasulphide, golden and crimson, very fine, pure.
Rare Metal Products Co.
Belleville, N. J.
Direct Factory Representation

ASBESTINE—
pared for use in Rubber. Send for liberal working sample.
SOLE PRODUCERS
International Pulp Co.
41 Park Row, New York City

The
BLUE LIST
of the Industry

Your Products Listed Here

reach buyers in rubber factories at a cost lower than is possible by any other method.

ARRANGE FOR YOUR LISTING TODAY!

BEAD CABLES— National Flat Woven and Pratt Patent Bead Cables.
National Standard Co.
Niles, Mich.

BOLTON BIAS CUTTER
Cuts cord or flat woven fabrics with equal ease and precision. In use all over the world.
Spadone Machine Co., Inc.
15 Park Row New York

CALENDERS—Embossing, for artificial leather, oil cloth etc.
Textile-Finishing Machinery Co.
83 Exchange Place, Providence, R. I.

CARBON BLACK—*Micronex* the world's standard gas black, universally known as the "King of Rubber Pigments."
Binney & Smith Co.
41 East 42nd St. New York City

CARBON BLACK
Godfrey L. Cabot, Inc.
Manufacturers for forty years.
940 Old South Bldg., Boston, Mass.
612 Metropolitan Bldg., Akron, O.

CARBON BLACK—*Aerfloted* Arrow Black for rubber compounding. Standard for grit-free uniformity.
J. M. Huber, Inc.
130 West 42nd St. New York

CARBON BLACK — *Black Goose Brand*—free from grit and impurities and imparts high tensile strength to the rubber compound.
Union Power Co., Inc.
310 United Bldg., Akron, Ohio. 607 Com'l. Nat'l. Bank Bldg., Shreveport, La. 25 West 43rd St., New York, N. Y.

CARBON BLACK or any other compounding material used by rubber manufacturers can be marketed at low cost by listing it in *The Market Place.*

CASES—Fibre construction, insure satisfactory shipping results. Send for sample.
Brooklyn Fibre Syndicate, Inc.
Decatur St. & Irving Ave.
Brooklyn, N. Y.

CATALPO — The universal and standard rubber pigment now being used in treads, solids, tubes, carcass, frictions, etc.
Moore & Munger
33 Rector Street
New York City

CHEMISTS read your listing in the MARKET PLACE. There is no cheaper way to reach these prospects.
Try It!

THE MARKET PLACE Section Continued on Second Page Following.

MARKETS

Current Cotton and Fabric Markets

NEW YORK, Aug. 17, 1926

Since our last report cotton prices have fluctuated rapidly downward on government crop reports and favorable weather conditions. Whereas spot closing was 19.20 on August 2, it closed at 18.20 today.

The outstanding feature of the market during the past fortnight was the high estimate of the Government semi-monthly report issued on August 9. The report showed a gain of 253,000 bales in the prospective crop of the year, compared with the previous forecast made on July 23. The indicated yield was 15,621,000 bales of 500 pounds gross.

Condition of the crop declined from 70.7 to 69.8 between July 16 and August 1, but as the decline was less than usual the indicated production showed an increase over that forecast on July 16.

Following this report, the market declined on the tenth when prices broke about three-quarters of a cent. October sold at 17¼ with the market under pressure. With continued favorable growing conditions indicating a large crop, prices fell on the 11th over half a cent to within $1.00 a bale of the season's low record.

On the 13th trading was very irregular with prices moving over a wide range. They reached new lows shortly after opening but the market met firm resistance with the result that final quotations were 12 to 19 points higher on the day.

This week saw the start of an advance of $2.00 on receipt of news of continued rain in both Eastern and Western sections and reports of insect damage. The day closed up 36 to 38 points. Today, however, the market was checked after opening high and the industry is now awaiting the next Government report with anxiety.

Current COTTON and FABRIC *Quotations*

COTTON CLOSING PRICES

	Open	High	Low	Close Aug. 17	Close Aug. 2
October	16.92	17.05	16.68	16.75	17.78
Dec.	16.96	17.02	16.68	16.72	17.72
January	16.93	17.05	16.76	16.79	17.75
March	17.18	17.25	16.99	17.01	17.98
May	17.54	17.48	17.13	17.20	18.12

Spot. 18.20.

TIRE FABRICS

CORD			
Feeler, carded, 23/5/3	lb.	.41 @	—
Peeler, carded, 23/4/3	lb.	.43 @	—
Peeler, carded, 15/3/3	lb.	.39½ @	.40
Peeler, carded, 13/3/3	lb.	.38 @	.39
Egyptian, carded, 23/5/3	lb.	.47 @	.50
Egyptian combed, 23/5/3	lb.	.42 @	.44
SQUARE WOVEN			
Carded American, 17¼ oz. 23-11 fly	lb.	.40 @	.42
Carded American, 17½ oz. 10-5 ply	lb.	.38 @	—
LENO BREAKER			
Carded American, 8 oz.	lb.	.42 @	.45
Carded American, 10 oz.	lb.	.42 @	.45
CHAFERS			
Carded American, 8¼ oz.	lb.	.42 @	—
Carded American, 9½ oz.	lb.	.42 @	.43
Carded American, 12 oz.	lb.	.42 @	—
Carded American, 14 oz.	lb.	.41 @	.42

SHEETINGS

40-inch 2.50-yard	yd.	.12¾ @	—
40-inch 2.85-yard	yd.	.11¼ @	.11½
40-inch 3.15-yard	yd.	.12½ @	.12¾
40-inch 3.60-yard	yd.	.10 @	.10¼
40-inch 3.75-yard	yd.	.08⅞ @	.09
40-inch 4.25-yard	yd.	.08 @	—

DUCKS

Belting and Hose	lb.	.32 @	.34
Enameling	lb.	.34 @	.37
Shoe Ducks	lb.	.37 @	.38
Single filling	lb.	.14 @	.16½
Double filling	lb.	.17½ @	.18

Sheetings

A good sized inquiry has featured the sheeting market and prices have held firm. As yet only scattered sales have developed as buyers have been looking for shaded prices. Contracts have been placed for October and November delivery and some business has been done in the first quarter of next year.

Ducks

The situation in ducks has improved somewhat. Mills have been doing a fair business in spots and filling-in business. The demand for enameling ducks has increased, and while hose and belting ducks are quiet, mills have orders which will carry them into the next quarter. Hose and belting duck is quoted firm at 32c.

Tire Fabrics

A somewhat better tone has been noticeable in the tire fabric market during the past two weeks, and quotations have advanced in nearly all grades. Carded peeler cords are selling at 42c for the 23s 5-3 ply, and the same price is quoted for 1 1-16 inch square woven. Fabric mills, however, are still operating on a rather curtailed basis. While many of the larger tire companies are said to be operating at capacity, they have been exercising considerable caution in placing fabric commitments. Most of the immediate demand has come from the smaller tire manufacturers.

The increasing production of balloon tires is necessitating a larger use of fabric in all quarters of the trade. Orders have been placed by Akron companies for over 4,000,000 pounds of fabric for delivery within the next three months, but as yet little has developed beyond the October position.

J. H. LANE & CO.

Tire Fabrics Cord Fabrics

Enameling Duck Drill Sheeting

Osnaburg and Special Constructions

250 W. 57 Street, NEW YORK 323 South Franklin St., CHICAGO

ALL THE LEADERS

Are represented in this section. Purchasing agents can rely on the concerns listed as thoroughly reliable in every way.

The Market Place 2.

Great Oaks From Little Acorns Grow

—and likewise a small beginning in the matter of advertising space is the first step to a bigger business!

Start Now by using listings in

THE MARKET PLACE

Rates are low— and results are sure.

CRUDE RUBBER — All Grades. Washed - Dried - Milled.
Send us Your Inquiries.
Gibraltar Rubber Corp.
West New York, N. J.

ENGINEERS
Machinists, Iron and Steel Founders
Standard and Special
Rubber Working Machinery
The Adamson Machine Co.
Akron, Ohio

CRUDE RUBBER BROKERS
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60 Beaver St., New York City
Members Rubber Exchange of N. Y.

Over 30 chemical firms are using *The Market Place* regularly. The cost is moderate and results sure!
The Rubber Age
225 Fourth Ave., New York

CRUDE RUBBER
Importers and Dealers
Members Rubber Exchange of N. Y. and Rubber Exchange Clearing House
Henderson, Helm & Co., Inc.
44 Beaver St., New York
Weekly Market Review on Request

FABRICS—Spots and Contracts: Tire Fabrics, Enameling ducks, Tube Wrapping Tapes.
H. Frank Jones
395 Broadway New York City

CHEMICALS — Accelerators
Trimene Base, Heptene, Monex, Crylene, Lithex, Aniline Oil.
Clay—Mineral Flour, Seminole (Georgia).
Antioxidant—VGB, a proven product.
Labels—all-rubber two color brands.
Naugatuck Chemical Co.
1790 Broadway, New York.

CRUDE RUBBER
We Solicit Your Inquiries
H. Muehlstein & Co., Inc.
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Offices in Akron, Chicago, Boston.

FABRICS—Tire, cords, enameling ducks, drills, sheetings, osnaburgs.
J. H. Lane & Co.
250 West 57th St. New York City

CHEMICALS and compounding ingredients; Clay, Whiting, Accelerators, Mineral Rubber.
R. T. Vanderbilt Co.
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Importers
Members Rubber Exchange of N. Y., Inc. and Rubber Exchange Clearing House, Inc.
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New England Southern Mills
LAWRENCE & CO.
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CHEMICALS and pigments for the rubber trade. Complete stocks.
Wishnick-Tumpeer Chemical Co.
CHICAGO CLEVELAND NEW YORK

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Aero Brand, product of the highest purity from dependable source of supply.
American Cyanamid Co.
511 Fifth Ave. New York City.

FACTICE—Prevents blooming, makes colors fast and a smoother batch.
Stamford Rubber Supply Co.
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CONSULT BANNER
Before You Buy
TIRE BUILDING MACHINES
The Banner Machine Co.
Columbiana, Ohio
Paul A. Frank, Akron, Ohio, Agent.

DRY KILN—for drying crude rubber and chemicals—Hunter Process.
Carrier Engineering Corporation
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FLUXITE — Liquid and Solid — A rubber softener and aging compound of great efficiency.
Damascus Mnfg. Corp.
E. 93rd. St. & Cassius Ave.,
CLEVELAND, OHIO

THE MARKET PLACE Section Continued on Second Page Following.

RUBBER MARKETS

Scrap Rubber

NEW YORK, Aug. 18, 1926

At this writing scrap rubber is dull with prices at a standstill. Stocks continue to be low with only small accumulations reported. Interest of reclaimers has been slight of late and if demand should suddenly develop prices would undoubtedly increase materially.

[*Prices to Consumer*]

Auto tire peelings		.01⅞ @	.02
Standard White auto	ton	50.00 @	55.00
Mixed auto	ton	25.00 @	27.00
Bicycle tires	ton	22.00 @	24.00
Clean solid truck tires	ton	40.00 @	42.00
Boots and shoes		.02⅛ @	.02¼
Arctics, untrimmed		.01⅛ @	.01⅜
Arctics, trimmed		.01½ @	.01⅝
Inner tubes, No. 1		.09 @	.09¼
Inner tubes, No. 2, compounded		.07 @	.07¼
Air Brake Hose	ton	28.00 @	36.00
Rubber hose	ton	18.00 @	20.00

Reclaimed Rubber

NEW YORK, Aug. 18, 1926

Reclaimed prices and production are being held down by low quotations on crude. Although rubber factories are generally working on high production schedules, their demands for reclaim are largely for spot delivery. Quotations are sightly lower, as follows:

Friction (Uncured)

No. 1	lb.	.32 @	.35
No. 2	lb.	.25 @	.27

High Tensile Black

Super-Reclaim No. 1	lb.	.23 @	.24
" " No. 2	lb.	.17 @	.18

Shoe

Unwashed	lb.	.08¼ @	.08¾
Washed	lb.	.09½ @	.12¼

Tube

No. 1 (Floating)	lb.	.18 @	.21
No 2 (Ccmpounded)	lb.	.17 @	.18

Tires

Black, unwashed	lb.	.09¼ @	.10
Black, washed	lb.	.11 @	.11¼
Black selected tires	lb.	.09¾ @	.11
Dark Gray	lb.	.11 @	14
Light Gray	lb.	.15 @	.16
White	lb.	.18 @	.19
Truck, Heavy Gravity	lb.	.09 @	.10
" Light Gravity	lb.	.10 @	.10½

Miscellaneous

Mechanical Blends	lb.	.07¼ @	.09
Red, High Grade	lb.	.15 @	.18

Crude Rubber

NEW YORK, Aug. 17, 1926

The activity which was expected to develop in the rubber market following the decision that exports would not be restricted for the current quarter has failed to materialize. The liquidation of speculative holdings and commission house buying has accounted for most of the trade. Despite reports that many tire factories are producing at capacity, there has been no marked increase in consumer interest. Rubber has been arriving this month on an average of 1,000 tons daily, and the weight of the heavy stocks on hand has had considerable influence on spot prices. Until demand develops there can be little prospect of a change. It is felt in some circles that the period of heaviest consuming is passing with large stocks on hand and the low prices of actual rubber will probably continue for some time. The trade apparently is not alarmed about further restriction on November 1, as it is felt that the large stocks on hand and afloat with new purchases during this quarter will fully provide for their needs.

Prices in the market opening on the 3rd continued to weaken with spot selling at 38¼c. Business on the exchange was fairly active, 466 lots changing hands, but the buying was chiefly by speculators and commission houses. London rubber stocks on the 2nd amounted to 27,766 tons, a decrease from the preceding week of 94 tons. The market remained rather bearish for the next few days. With the announcement on the 6th of the 21d. restriction basis for the next quarter, prices advanced sharply. On the exchange 500 lots changed hands, chiefly the result of the bullish movement of speculators. Some slight factory buying was in evidence. The market held firm for the rest of the week.

The warehouse report of the 9th showed London rubber stocks at 27,972 tons, an increase of 206 tons. The weakening of London cables and lack of actual demand resulted in falling prices on the 9th and spot closed at 37½ on the outside. There was considerable speculative activity in an effort to hold the market, but there was practically no factory interest. Exchange prices declined from 80 to 130 points.

Prices stiffened slightly on the 10th with firm quotations from London, but lack of buyers made it difficult to uphold the rally. The trade appeared to be waiting the official consumption figures. Prices advanced somewhat on the 12th but were nominal as inquiry was light. Advancing London prices on the 14th resulted in a complete of buyers, and practically nothing was done either on the exchange or on the outside. London rubber stocks for the week showed a further increase of 1,341 tons, the total amount on hand being 29,313 tons on the 16th.

Rubber Association figures released on the 16th showed arrivals of 37,087 tons in July as against about 30,000 in June. Stocks on hand and in transit were 64,896 tons but stocks afloat were less than last month, 38,334 tons. While the report had a slight bearish effect on the market and prices broke slightly, trading was light. Spot sheets were quoted at 38c and prices on the exchange fell off from 40 to 90 points. Closing exchange prices are shown in the table at the bottom of this page.

AUG. 17 OPEN MARKET PRICES

Plantations—

Ribbed Smoked Sheets			
Spot	.38	@	—
August	38½	@	—
Sept.	39	@	—
Oct./Dec.	.40	@	—
Jan./Mar.	.41	@	—
First Latex, crepe spot	.39½	@	—
Amber Crepe, No. 2, spot	.37	@	—
" " No. 3	.36	@	—
" " No 4	.35	@	—
Brown Crepe, Rolled	.36	@	—
" " Clean, thin	.37½	@	—
" " Specky	.33½	@	—

Pontianac—

Bangermassin	Nominal		
Palembang	Nominal		
Prime Pressed	Nominal		
Sarawak	Nominal		

Paras—

Up-river Fine	.38½	@	—
" Medium	.36	@	—
" Coarse	.21	@	—
Acre Bolivian, fine	.39	@	—
Tapajos, fine	.33½	@	—
Islands, fine	.33½	@	—
Cut Beni Bolivian, fine	.40	@	—

Caucho Ball—

Upper, shipment	.22	@	—

Centrals—

Corinto, scrap	.21	@	—
Esmeraldo, sausage	.21	@	—
Guayule, w and d	.32	@	—

Africans—

Benguela, No. 2	Nominal		
Congo, upper, black	Nominal		
" " red	Nominal		
Kassai, Prime Red	Nominal		

Balata—

Block, Columbia	.64	@	—
" Cuidad	.62	@	—
Surinam, sheet	.70	@	—

Gutta Percha—

Siak	.32	@	.33
Red Macassar	3.00	@	3.50

Chicle—

Mexican, Yucatan	.65	@	—

LONDON MARKET

Standard Ribbed Smoked Sheets—*Buyers*

Spot	19⅝d
August	19⅝
September	19¾
Oct./Dec.	20⅛
Jan./March	20½

SINGAPORE MARKET

Standard Ribbed Smoked Sheets—*Sellers*

August	18⅜d
Sept.	18⅝
Oct./Dec.	19

Closing Prices on Rubber Exchange of New York, Inc.

AUGUST 3 to 17

	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Sales*
Aug. 3	37.50	39.50	38.00	38.70	39.00	39.60	39.90	40.10	40.20	40.80	41.20	41.20	446
4	36.60	37.10	37.40	37.70	38.20	38.70	39.00	39.30	39.50	39.80	40.10	40.30	362
5	37.00	37.80	38.30	38.50	38.70	39.40	39.70	40.00	40.20	40.50	40.80	41.50	196
6	38.10	38.70	39.40	39.70	40.20	40.60	40.90	41.00	41.30	41.50	41.80	42.00	493
7	37.90	38.80	39.00	39.70	40.10	40.50	40.60	40.80	40.90	41.10	41.30	41.50	48
9	37.30	37.90	38.20	38.50	39.10	39.70	39.80	40.10	40.40	40.70	41.00	41.20	389
10	37.30	37.90	38.20	38.70	39.20	39.60	39.70	40.20	40.30	40.70	40.90	41.10	58
11	37.20	37.80	38.20	38.50	39.10	39.50	39.70	40.00	40.30	40.60	40.80	41.10	40
12	38.00	38.60	39.00	39.30	39.60	40.20	40.50	40.70	40.90	41.20	41.30	41.60	156
13	38.40	38.60	39.20	39.50	39.90	40.50	40.80	40.90	41.40	41.90	42.20	42.40	194
14	38.50	39.20	39.80	40.20	40.70	41.10	41.40	41.70	42.00	42.60	42.90	43.00	59
16	38.30	38.80	39.30	39.60	40.00	40.40	40.70	40.90	41.20	41.80	42.00	42.20	139
17	38.30	38.80	39.10	39.40	39.90	40.50	40.70	41.00	41.30	41.90	42.10	42.30	44

(*) In lots of 2½ tons each; totals are for old and new contracts.
(Prices are for new contracts)

The Market Place

3.

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Continental Rubber Co.
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MOLDS AND CORES—Tire building equipment; general machine work.

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Akron, Ohio

RECLAIMED RUBBER of Standardized Quality.
NO. 188 FOR TUBES
Philadelphia Rubber Works Co.
New York Akron Philadelphia

LINERS — PROCESSED
For
Various Rubber Stocks
The Cleveland Liner & Mfg. Co.
5508 Maurice Ave., Cleveland, O.

MOLDS & CORES—Tire building machines; tire finishing stands; tubing machines; hydraulic presses.

The Akron Standard Mold Co.
Akron, Ohio

RECLAIMED RUBBER—for all purposes.

Rubber Regenerating Co.
Naugatuck, Conn.

MACHINERY—
Heater Presses, Molds and Cores, Tubing Machines.
The Williams Foundry & Mach. Co.
"In Business Since 1888"
Akron, Ohio

MOLDS & CORES—for automobile tires; general machine work.

Kuhlke Machine Co.
Akron, Ohio

RECLAIMED RUBBER
A standardized grade for every requirement.
U. S. Rubber Reclaiming Co., Inc.
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"43 Years Serving the Industry Solely as Reclaimers"

MANDRELS--CIRCULAR
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Prompt Service—Let us quote you.
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"NU-GUM" RUBBER
Produced from No. 1 Floating Tubes. Absolutely pure — no oils —no compound added. *Specific Gravity*, .98.
E. L. Bullock & Sons, Inc.
99 John St. New York City

RECLAIMED RUBBER
The Xylos Rubber Co.
Akron, Ohio
CAPACITY 250,000 POUNDS DAILY

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116 Central Savings & Trust Bldg., Akron

PINE TAR — Retort "Sunny South", "Pentarco", "American". Brands for Tires, Tubes, Mechanicals,—Reclaim. *The Best Softener*
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RED OXIDE—A special grinding, guaranteed uniform in color and quality.
Joseph A. McNulty
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MICA—160 mesh—water ground —water floated—free from foreign matter.
Stocks carried at Trenton, N. J.—Cleveland, O.—Chicago, Ill.
The Harshaw Fuller & Goodwin Company
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We specialize in fine Grey, Black and Red Reclaimed Rubber.
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RELIABLE RUBBER SUBSTITUTES
T. C. Ashley & Co.
682 Atlantic Ave. Boston, Mass.
Represented by H. N. RICHARDS CO.
TRENTON, N. J.

MOLDS
FOR TIRES, MECHANICAL GOODS & DRUGGIST SUNDRIES.
The Akron Rubber Mold & Machine Co.
AKRON, OHIO.

RECLAIMED RUBBER—
Uniformity, reliability, cleanliness.
Pequanoc Rubber Co.
Butler, N. J.

RUBBER—Crude and scrap, all grades.
H. Muehlstein & Co.
Liggett Bldg. New York
Akron, Chicago, Boston, Hoboken

THE MARKET PLACE Section Continued on Second Page Following.

Accelerators
Colors
Mineral Rubber
Compounding Materials

RUBBER CHEMICAL and COMPOUNDING MATERIAL MARKETS

Softeners
Vulcanizing Ingredients
Rubber Substitutes

NEW YORK, August 18, 1926

The market for chemicals and compounding materials has been rather quiet during the past two weeks with only a few minor variations in quotations since our last report. Rubber manufacturers, though actively producing more tires and mechanical goods than is customary at this time of the year, have been content to purchase in small quantities for immediate delivery. The producers, however are not unduly pessimistic as to the future, for they argue that with production at such high levels, demand for sizable quantities of accelerators, blacks and zinc oxides can not be far off. Prices have been firm and stocks are ample. Quotations follow:

ACCELERATORS

Organic

A-7	lb.	.70 @	—
A-40	lb.	.70 @	—
A-19	lb.	.75 @	—
A-11	lb.	.75 @	—
Aledhyde ammonia, crystals	lb.	.82 @	—
Aniline oil, drums	lb.	.17 @	.17½
"BB"	lb.	1.05 @	1.07
Crylene	lb.	.70 @	—
paste	lb.	.50 @	—
Di-Ortho-Tolylguanidine	lb.	1.08 @	—
Diphenylguanidine	lb.	.85 @	.88
Ethylidene aniline	lb.	.60 @	.65
Excellerex	lb.	.35 @	.40
Formaldehyde-Aniline	lb.	.40 @	.42
Grasselerator 102	lb.	.80 @	.82
Grasselerator 552	lb.	4.80 @	5.00
Grasselerator 808	lb.	1.25 @	1.50
Heptone	lb.	.55 @	—
Hexamethylene-tetramine	lb.	.80 @	.82½
Monex	lb.	3.25 @	—
Paraphenylenediamine	lb.	1.25 @	1.30
Piperidine-Piperidyldithio-Carbamate	lb.	4.80 @	5.00
R & H 50	lb.	— @	.65
Super-Sulphur No. 1	lb.	.50 @	—
Super-Sulphur No. 2	lb.	.18 @	.25
Tensilac, No. 41	lb.	.65 @	—
Thiocarbanilide, kegs	lb.	.26 @	28½
Trimene	lb.	.75 @	—
base	lb.	1.20 @	1.35
Triphenylguanidine	lb.	.70 @	.73
Tuads	lb.	3.25 @	3.50
Vulcone	lb.	.75 @	.79
Z. 88	lb.	.75 @	1.00
Zimate	lb.	4.00 @	—

Inorganic

Lead, sublimed blue	lb	.10 @	.10½
Lead, white	lb.	.10¾ @	—
Litharge, domestic	lb.	.11½ @	—
Magnesia, calcined, light	lb.	.06½ @	—
heavy	lb.	.04½ @	—

COLORS

Blacks (See Compounding Materials)

Blues

Prussian	lb.	.32 @	.35
Ultramarine	lb.	.08 @	.35

Browns

Siena, Italian	lb.	.04 @	.08
Umber, Turkey	lb.	.04 @	.06

Greens

Chrome, light	lb.	.28 @	.31
medium	lb.	.29 @	.32
dark	lb.	.31 @	.33
Chromium Oxide, bbl.	lb.	.31 @	.35

Reds

Antimony crimson, 15/17	lb.	.27 @	—
sulphur free	lb.	.48 @	.50
vermillion 15/17	lb.	.37½ @	—
golden 15/17 F.S.	lb.	.20 @	—
Indian English	lb.	.11 @	.13
Oximony	lb.	.13¼ @	—
Para toner	lb.	.80 @	.90
Red oxide, reduced	lb.	.11 @	—
pure	lb.	.12 @	.14
Blue Ridge	lb.	.12 @	.14
Toluidine toner	lb.	1.80 @	2.10
Venetian red	lb.	.01½ @	.05
Vermillion, quicksilver, English	lb.	1.45 @	1.50

Whites

Albalith	lb.	.05⅞ @	.06⅛
Lithopone, Akrolith	lb.	.05¾ @	.06
Litaopone, Asolith	lb.	.05⅝ @	.06⅛
Zinc Oxide—American Process XX red	lb.	.07½ @	.07¾
Kadox, black label, kegs	lb.	.10⅞ @	.11⅛
blue " " "		.09⅞ @	.10⅛
red " " "		.08⅞ @	.09⅛
American Azo: ZZZ (lead free)	lb.	.07¼ @	.07¾
ZZ (under 5% leaded)	lb.	.06⅞ @	.07⅜
Zinc Oxide—French Process White seal	lb.	.12⅜ @	—
Green seal	lb.	.11⅝ @	—
Red seal	lb.	.10⅝ @	—

Yellows

Chrome	lb.	.17½ @	.18
Ocher, French medium	lb.	.02¼ @	.03
domestic	lb.	.01¾ @	.02½

COMPOUNDING MATERIALS

Aluminum Flake (f.o.b. plant)	ton	21.85 @	24.50
hydrate light	lb.	.16 @	.17
Ammonia carbonate	lb.	.13½ @	.16½
Are-O-Sel	ton	8.00 @	11.00
Asbestine	ton	16.00 @	18.50
Barium carbonate	lb.	.03½ @	—
Barium Dust	lb.	.05 @	.06
Barytes southern off-color, ton		12.00 @	18.00
Western prime white ton		23.00 @	—
imported	ton	27.00 @	36.00
Basofor	lb.	.04½ @	—
Blacks Arrow "Aerfloted"	lb.	.08 @	.12½
Bone Black	lb.	.05½ @	.11
Carbon, compressed	lb.	.08½ @	.12½
" uncompressed	lb.	.08 @	.12
Drop Black	lb.	.07½ @	.14
Lamp "	lb.	.12 @	.40
Micronex	lb.	.09 @	.13
Thermatomic carbon	lb.	.05 @	—
Blanc fixe dry f.o.b. works	lb.	.04 @	.04½
Carrara filler	lb.	.01¾ @	.02
Catalpo (fact.)	lb.	.02 @	—
Chalk	lb.	.02½ @	.04½
Clay, China, domestic	ton	15.00 @	25.00
Aerfloted Suprex	ton	13.00 @	20.00
Blue Ridge, Dark	ton	9.00 @	—
" " Light	ton	12.00 @	—
Dixie	ton	20.00 @	35.00
Langford	ton	12.00 @	22.00
Mineral Flour, c. l. fob mine	ton	17.00 @	20.00
Seminole, c. l. fob mine	ton	16.00 @	—
Glues, extra white	lb.	.20 @	.29
medium white	lb.	.18 @	.24
common bone	lb.	.12 @	.14
Graphite flake, bbls.	lb.	.06½ @	.12
Magnesia, carbonate	lb.	.08 @	.08¾
Mica, powdered	ton	90.00 @	100.
Rotten Stone (powdered)	lb.	.02½ @	.04½
Soapstone, powdered	ton	15.00 @	22.00
Starch, powdered	cwt.	3.30 @	3.70
Talc, domestic	ton	16.00 @	20.00
Terra Alba	cwt.	1.25 @	2.00
Tripoli, white	lb.	.02 @	.02¼
Whiting, commercial	cwt.	.85 @	1.00
English cliffstone	cwt.	1.50 @	—
Quaker	ton	13.00 @	15.00
Superfine	ton	10.00 @	12.00
Sussex	ton	8.00 @	10.00
Wood pulp XXX	ton	35.00 @	—
" " X	ton	25.00 @	—

MINERAL RUBBER

Genasco (factory)	ton	50.00 @	52.00
Granulated M.R.	ton	33.00 @	38.00
Hydrocarbon, Hard	ton	29.00 @	35.00
Hydrocarbon, Soft	ton	29.00 @	—
320/340 M.P. hydrocarbon (c. l. factory)	ton	47.00 @	52.00
300/310 M.P. hydrocarbon (c. l. factory)	ton	42.00 @	47.00
Paradura	ton	70.00 @	72.50
Robertson, MR, solid	ton	35.00 @	75.00
M.R. (gran)	ton	42.00 @	80.00

SOFTENERS

Acids

Muriatic, 20%	cwt.	.95 @	1.05
Nitric, 36 degrees	cwt.	5.00 @	5.25
Sulphuric, 60 degrees	ton	10.50 @	11.50
66 degrees	ton	15.00 @	16.00
Tartaric, crystals	lb.	.29 @	—

Alkalies

Caustic soda, 76%	cwt.	3.76 @	3.91
Soda ash, 58% C.L.	cwt.	1.43 @	1.45½

Oils

Castor, No. 3 bbls.	lb.	.12¼ @	—
Corn, crude, bbls.	lb.	.11¼ @	—
refined	lb.	.13 @	—
Cottonseed, crude		.10½ @	—
Cycline	gal.	.26 @	.34
Glycerine, C.P. drums	lb.	.23½ @	.24
Linseed, RawC.L. bbl.	lb.	.11 @	—
Liquid Rubber	lb.	.12 @	—
Moldrite	lb.	.05 @	.06
Palm, Lagos	lb.	.08½ @	.08¾
Niger	lb.	.08⅛ @	.08¼
Peanut, domestic crude	lb.	.12½ @	—
Petrolatum, white	lb.	.11¼ @	.11¾
amber	lb.	.03⅞ @	.04
dark amber	lb.	.03⅞ @	.03¾
Pine, steam distilled	lb.	.60 @	.65
Rapeseed, refined	gal.	.84 @	.90
blown	gal.	1.00 @	—
Rosin, first rectified	gal.	.60 @	.62
second rectified	gal.	.65 @	.67
Soya Bean, crude		.13¼ @	.13½
Synthecite	lb.	.06 @	—
Tar, commercial	gal.	.30 @	.32

Resins and Pitches

Pitch, Burgundy	lb.	.06½ @	.07½
coal tar	gal.	.05½ @	.06
pine	bbl.	7.50 @	8.50
Rosin, grade K	bbl.	11.25 @	—
Tar Retort	bbl.	16.00 @	17.00
kiln burned	bbl.	15.00 @	16.00
Tackol	lb.	.09 @	.15

Solvents

Alcohol denatured, No. 1 bbls.	gal.	.34 @	.47
Benzol, 90%	gal.	.30 @	—
pure		.30 @	—
Carbon bisulphide	lb.	.05½ @	.06¼
tetrachloride	lb	.07 @	—
Motor gasoline, steel bbls.	gal.	.22 @	—
Naptha, V. M. & P.	gal.	.20 @	.21
Turpentine, spirits	gal.	.86 @	.87
wood	gal.	.80 @	.84

Waxes

Beeswax	lb.	.60 @	.62
Carnauba, No. 1	lb.	.50 @	.51
Ceresin, white	lb.	.09 @	.10
Montan, crude	lb.	.06 @	.06½
Ozokerite, black	lb.	.24 @	.25
green	lb.	.26 @	.30
ParaffineWhiteA.M.P.	lb.	.05¼ @	.05¼
Yellow A.M.P.	lb.	.05¼ @	.05⅝

ANTI-OXIDANTS

Age-Rite	lb.	.85 @	.90
Antox	lb.	.88 @	—
VGB	lb.	.66 @	.70

SUBSTITUTES

Black	lb.	.08½ @	.14
White	lb.	.10 @	.17
Brown	lb.	.10 @	.15
Brown factice	lb.	.10 @	.16
White factice	lb.	.10½ @	.17½

VULCANIZING INGREDIENTS

Ethyl Chloride, Cyl.	lb.	.55 @	—
" " Drums	lb.	.45 @	—
Sulphur Chloride (drums)	lb.	.04 @	—
Sulphur flour Superfine, bags	cwt.	2.20 @	2.75
" bbls.	cwt.	2.35 @	3.10
100% pure, refined, bags	cwt.	2.60 @	3.15
bbls.	cwt.	2.85 @	3.40

A-R-R-O-W — B-L-A-C-K

Resistance!

The wear-resistance of rubber products depends directly upon the re-enforcing pigments used

AERFLOTED ARROW BLACK is the preferred carbon black for all rubber stocks requiring maximum strength and durability. Our precise manufacturing control has eliminated the variations which cause trouble in high quality products.

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The RUBBER AGE

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With the Editor

This week rubber chemists from practically every rubber factory in this country, with many others from abroad are meeting in Philadelphia to hear papers presented by a number of nubber technicians on various aspects of rubber. The meeting, as is already well known, commemorates the Tenth Anniversary of the Rubber Division, A.C.S. and from indications it will be the largest ever held by the division.

To bring together between 500 and 600 chemists and rubber executives has meant many hours of intensive efforts by the Chairman of the Division, J. W. Bierer, who in addition has enlisted the co-operation of many agencies and individuals in the industry.

It is with pride therefore that THE RUBBER AGE looks upon the part it played in the Symposium plans. Not only has it assisted by means of complete reports on the progress of the plans for the meetings but it was the only rubber paper to co-operate with the Banquet Committee in publishing an advertisement urging attendance at the Banquet. THE RUBBER AGE further supplied to every one at the meetings an attractive booklet containing a complete program of events, titles of papers with space for notes and several blanks for convenience in asking questions on any of the papers delivered. That this booklet was of service to our many chemist friends is the hope of THE RUBBER AGE.